

Recovering the Proteome of Archived Biomedical Specimens

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by

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Declaration:

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person, except where due acknowledgement has been made in the text.

Ashley Salamon

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List of Abbreviations

ABC	Ammonium bicarbonate
Ace	Acetone
ACN	Acetonitrile
Arg	Arginine
C	Celsius
DDH ₂ O	Double distilled water
DH ₂ O	Distilled water
DNA	Deoxyribonucleic acid
DTT	Dithiothreitol
EDTA	Ethylenediaminetetraacetic acid
FA	Formic acid
GPM	Global Proteome Machine
HCl	Hydrogen chloride
HPLC	High-performance liquid chromatography
IAA	Iodoacetamide
LC	Liquid chromatography
Lys	Lysine
M	Molar
m	Meters
MeOH	Methanol
mL	Milliliters
Mm	Millimolar
MS	Mass spectroscopy
PMT	Posttranslational modification
SDS	Sodium dodecyl sulfate
TFA	Trifluoroacetic acid
μL	Microliters

Abstract

While several proteomic studies have undertaken the challenge of analyzing formalin fixed paraffin embedded (FFPE) tissue, few have developed optimized protocols for studying FFPE human brain tissue. This study will examine if an improved SDS free proteomic method applied to FFPE human brain tissue will produce a greater number of identified proteins then assess optimized methods to produce reliable, robust and reproducible results from this tissue. A modified guanidinium hydrochloride based extraction method was employed and the extracted proteins were analyzed using LC-MS/MS, for shotgun proteomics. The FFPE human brain tissue samples were acquired from archived specimens at the Griffith University School of Anatomy. By analyzing tissue samples from human FFPE brain, we evaluated conditions used for tissue lysis, digestion, and the effects of the fixation time and storage duration on the number of proteins obtained during shotgun proteomic analysis on FFPE tissue. Comparing the identified proteins and experimental procedures to the existing FFPE tissue studies in the literature, the limitations due to protein quality were identified, optimized processes proposed, and future studies including multi-omic analysis of the human brain, were outlined.

Lay Summary

The human brain has been the subject of interest for hundreds, if not thousands of years. In addition to being a complex tissue, human brain tissue is difficult to acquire for ethical study. In many hospitals, museums, and learning institutions around the world, formalin fixed paraffin embedded (FFPE) brain tissue is preserved and stored for histological analysis. Since this method of preservation can make biomolecular research such as the extraction of DNA or proteins very complicated, these brain tissues have been infrequently used. Understanding all of the proteins in a tissue, such as brain tissue, provides an insight into how the tissue functions, and even how some diseases may originate or present themselves. Our study evaluated conditions used to complete proteomic extraction in FFPE preserved tissue and examined if an improved SDS (detergent) free proteomic method applied to FFPE human brain tissue will produce a greater number of identified proteins. The greater number of proteins identified in a limited sample allows a better picture of the how the tissue and system functions. By looking at the problems surrounding FFPE brain tissue and how to best complete biochemical analysis, we can generate more reliable data for research. This will allow researchers to get the most information possible out of each limited sample, building a better picture of how an individual organ and eventually biological system works.

1.0 Introduction

1.1 Protein Structure and Properties

Proteins are relatively large and complex molecules that are found in all living systems. These versatile macromolecules play many critical roles in biological systems, and understanding their structure and function is critical. All proteins are polymers that are made up of hundreds or thousands of smaller units, called amino acids¹. There are twenty different amino acids that can be combined in a variety of different ways to constitute a protein¹. These amino acids are linked to one another in long chains, referred to as peptides and are the primary structure of a protein¹. The secondary structure is also dictated by the amino acid sequences that controls the way the protein will fold into a three-dimensional structure¹. The three-dimensional structure of each protein directly affects its function. Proteins contain a large range of functional groups, including alcohols, thiols, and carboxylic acids, as the side chains of each amino acid¹. The combination of these amino acid functional groups provides proteins with a wide range of biological functions¹. Due to this wide range of proteins and their functions, there are proteins that are unique to different organisms, and/or biological systems. While the proteins within any sample will depend on which biological tissue is examined, the area in which the sample is taken will largely dictate the proteins found. For example, proteins within tissue samples depend entirely on the organ or region sampled. The great diversity of protein abundance and their physical properties makes them both interesting and difficult to study².

1.2 Proteomics

The term proteomics was first used by Marc Wilkins in 1994 and is the study of all expressed proteins³. Not only does proteomics study all of the proteins in a given cell, it also examines the protein isoforms, modifications, interactions, structural descriptions, and almost everything post genomics³. This field of study is relatively new in comparison to fields such as genomics, but aims to analyze the entirety of a proteome in a single experiment or a single set of experiments^{4,5}. Quantitative proteomics is an important aspect of systems biological studies⁶. The subset measures the number of particular proteins absent or present in a specific sample. Neuroproteomics is an application of quantitative proteomics, examining the central nervous system^{7,8}. The number of proteins present is related to the number of active genes within an organism, but it is not a straight forward

relationship⁹. The mammalian brain in particular, is complex at many levels, making analysis exceptionally difficult⁷. The specialized brain regions, the limited correlations between messenger ribonucleic acid (mRNA) expression and protein expression, and the large differences in protein expression in different brain regions adds to the complexity of proteomics analysis^{10,11}. Individual types of neurons also have unique morphologies and can be located large distances apart; this poses difficulties when trying to study a specific protein or group of proteins within the brain¹⁰. By using a quantitative approach, as opposed to a qualitative approach, one is able to look at characterizing which proteins are present and in what concentrations as opposed to the differences in isoforms and structures.

1.3 Challenges of Proteomics

Proteomics, while being a transformative technology, has a host of challenges and limitations. The first challenge is with the proteins themselves. Many parameters influence the proteins that are present as well as their functionality. The proteome is defined by the physical state of proteins within each cell or tissue, but also their subcellular location and their interaction in protein-protein complexes that constantly change². Proteins not only vary in their location but many small proteins often diffuse between the nucleus and the cytosol or even out of the cell³. Notably, some extraction methods can relocate proteins away from their associated cellular structure or cellular location, making it particularly difficult to determine a complete list of proteins found within a tissue or organ. Since proteins always function by interacting with other proteins, the function or relationship of two or more proteins can be challenging to identify. Another challenge is the enormous number of proteins present and the relative abundance of proteins. Not all proteins encoded for within the genome will be expressed in a single cell or tissue, and there is a huge range in how proteins are expressed per cell ranging from one to several million^{2,12}. This makes proteins with low expression very difficult to identify in the mix with the more abundant proteins in thousands or even millions of copies.

Comprehensive proteomic studies, while yielding meaningful biological insights, are very challenging. Proteomics provides a different insight, than genomics and transcriptomics, into complex biological samples⁹. Due to the stability and availability of deoxyribonucleic acid (DNA), the study of genomics and the standard operating procedures for genetic analysis has been quick in comparison¹³. The function of the

genome is the foundation for what proteins will be expressed in each cell. However, the process from gene to protein is not strictly linear, meaning we can only estimate the efficiency of translation¹³. The expression pattern, post translational modifications (PMT's) and protein localizations, which cannot be reliably predicted from the genome. There are many different forms of PMT's, which are present in almost every protein. These PMT's influence structure, function, and expression of proteins. While many of them have been linked to physiological condition and disease, some PMT's have even been linked to aging. In the context of proteomic sample processing some PMT's can be created, most commonly when a protein is cleaved in the digestion step¹⁴. It is important to know which reagent or enzyme you are using and where those certain reagents will typically cleave larger proteins, so the PMT's generated can be predicted and accounted for in the data analysis^{14,15}.

While DNA and ribonucleic acid (RNA) are made from four different nucleotides, and buffers exist that can solubilize all of these nucleotides, proteins, in contrast, are made from an assortment of 20 amino acids, so their structures can be incredibly complex; no single buffer is able to solubilize all of the proteins in a cell or organism². Complete mixtures of proteins can be broken down in a variety of buffers of differing pH, and ionic strengths depending on the target protein or aim of the study². Additionally, proteins react differently depending on their structure and amino acid sequence. Some hydrophobic proteins may not be soluble in each buffer or solution without the presence of a detergent, while others may bind to materials or reagents used in the extraction process^{2,16}. Adding a detergent to dissolve the more resilient proteins or elute the proteins off surfaces, can interfere with the downstream methods, data manipulation and analysis². In addition, proteins found in low abundance may not be detected after the purification and filtering methods have been applied to remove these detergents¹⁶. The dynamic nature of proteomes and their enormous complexity can result in data sets that confuse rather than lead to new system insights. The best way to overcome these challenges is to design a specific study with a clear goal that acknowledges these difficulties and limitations.

1.4 Archived Material

To be able to research then understand how certain organs and systems function, direct examination is required. The study of anatomy through dissections has been

documented as far back as the 3rd century, while sample preservation became far more common in the 1600's with the rise of anatomy schools¹⁷. In the seventeenth century, a Dutch anatomist by the name of Frederik Ruysch was the first to successfully preserve soft tissue including several brain samples¹⁸. Though initial brain collections were to study the structure of the organ, by the 1950's clinicians and researchers noted the importance of collecting brains for disease research¹⁷. Specimens were being preserved at this time in formalin, paraffin wax blocks or celloidin blocks, with it being noted that the post-mortem brain must be placed on ice to be "kept fresh" for biochemical studies¹⁹. By the 1960's brain banks in particular were being formed internationally, so as the "omics" technologies advanced, there was a limited library of preserved tissues ready to be analyzed²⁰. Despite increased legal constraints, brain banks still operate and form networks today to provide clinicians and researchers with what limited samples are available¹⁷.

As previously mentioned, the collection, handling, and processing of tissue directly impacts the stability of the biomolecules²¹. The time in storage, and preservation mediums have a major effect on the viability of the sample for different forms of analysis, especially downstream biochemical processes^{21,22}. The predominant methods of tissue preservation are formalin fixed paraffin embedded (FFPE), mostly for pathological structural studies; glutaraldehyde-fixed resin-embedded blocks, for transmission electron microscopy studies; and frozen tissue for biochemical analysis²³. Though frozen tissue is often preferred for biochemical analysis such as proteomics, frozen tissue samples are in high demand and though freezing causes protein sheering, there are minimal downstream biochemical complications²⁴. However, keeping samples frozen is expensive, and takes up a large amount of space; for this reason, many clinical tissue specimens are FFPE to provide space and energy efficient storage^{25,26}. Due to the popularity of FFPE tissues and their stability in storage, the major benefit to a researcher is that one can obtain a large number of samples over a reasonable period of time²⁶.

Unlocking the proteome from FFPE tissues is a challenge because protein extraction can be hindered by the peptide crosslinking that can form in these types of samples. When tissue is fixed, the formalin penetrates the tissue and adds methylene hydrate groups to the side chains of the amino acids (such as arginine, tyrosine, histidine, asparagine, glutamine and tryptophan) which leads to methylene bridge formation^{25,27}. This

bridge formation stabilizes the cellular structure by crosslinking the DNA, RNA, and proteins, but it makes most common extraction methods and analysis more difficult by causing the proteins to become relatively insoluble²⁶⁻²⁸. In addition, there is no universal standard FFPE tissue fixation method for preserving tissue samples for archiving, so there are many different protocols causing a great amount of diversity in the quality of the tissues and the amount of crosslinking²¹. Difficulty in proteomic analysis is also present with protein degradation. The time of harvesting the tissue is very critical. If the sample was obtained as an autopsy specimen, there can be extensive protein degradation; the longer the post-mortem interval, the poorer the tissue quality^{29,30}. Likewise, the fixation time and protocol has a direct effect on the efficiency of protein recovery; the longer the fixation times or the higher the formalin concentration, the tighter the network of crosslinking³¹. While heat can be used to reverse some of the cross linking, and chemical digestion can break down most others, it then becomes a challenge to identify what chemical changes remain^{32,33}. Since the tissue that is supplied for many researchers is not specifically removed for research, but rather is tissue that is left over from other diagnostic procedures, working with available samples with material limitations is a necessity²⁹.

1.5 Experimental Strategies in Proteomics

There are two main experimental approaches to proteomics, these are gel-based protein identification approaches and shotgun proteomics approaches. Gel-based protein identification works by isolating proteins from their cells using a high concentration buffer, and separating the proteins out using 2D gel electrophoresis. The gel pieces, containing the proteins of interest, are cut out and digested in the gel, run on a mass spectrometer, and compared to database entries to identify the protein. One of the first gel-based protein identification techniques used was immunohistochemistry; this method disrupts cell membranes with a detergent, then applies an antibody specific to a certain protein, which is labelled or stained to allow protein visualization³⁴. Shotgun proteomics, however, isolated the proteins from their cells using a high concentration buffer, then directly completed a trypsin digest. This produces a very large number of proteins that are separated by charge using high-pressure liquid chromatography (HPLC), and undergo reverse phase separation according to hydrophobicity directly into a mass spectrometer (MS). The MS data collected is compared to existing and simulated (*in silico*) data to identify specific

proteins. The shotgun approach gives a good idea of all the proteins present within a sample. It is common to compare two or more samples to determine the different proteins present.

1.6 Extraction and Quantification Methods

There are a vast number of methods used to complete a protein extraction from cell cultures or tissues. While there is much variation and optimization within each method, a traditional extraction, digests the tissue into peptides via an in-solution enzymatic digest, commonly using trypsin³⁵. After digestion, a peptide cleanup is completed with purification and final acidification preparations prior to HPLC analysis³⁵. An alternative extraction method is using TRIzol reagent. TRIzol is a reagent made of guanidine isothiocyanate, phenol, buffer and solubilizing agents that allows for simultaneous isolation of RNA, DNA and proteins from the same sample³⁶. A sample is homogenized and undergoes a liquid phase separation to isolate then precipitate the RNA from the aqueous phase, DNA from the interphase and the proteins from the organic phase³⁷. This method is beneficial as it uses less biological sample to generate a multiomic dataset, which is key in limited samples such as brain or heart tissue^{38,39}. The disadvantages are the technical difficulties resolubilizing the isolated proteins after extraction and precipitation³⁹. By optimizing a TRIzol extraction, it can produce a smaller protein yield but a broad view of protein composition³⁸. Since each extraction method has strengths and weaknesses, it is key in project design to determine the goal of each experiment before deciding on the method to be employed for each study.

After extraction, it is common to quantify the proteins present before downstream analysis. A popular quantification method is the Bradford assay. This method uses Van der Waals forces, and hydrophobic interactions to bind Coomassie blue dye to certain proteins in an acidic environment. A known mass of protein is added to a set amount of dye reagent; this causes a colour shift from a reddish-brown colour (absorbed at 465nm) to a blue colour (absorbed at 610nm)^{40,41}. The absorbance is measured at 595nm, where the difference between dye forms is greatest, as the blue dye protein complex is formed⁴¹. This assay is often used as a fast and accurate method for determining protein concentration as it requires one simple dye reagent with rapidly developing colour, and is less subject to interference over the Lowry method^{41,42}. The drawback to the Bradford assay is that peptides with low

molecular weights do not produce a reliable and measurable colour change, and colour development varies with different proteins^{43,44}. While not the only suitable method, the Bradford assay provides a quick and simple method of quantifying proteins prior to downstream analysis, so it is often used in proteomic studies.

1.7 Mass Spectrometry

There are many different technical disciplines that contribute to the field of proteomics, from cell imaging by electron microscopy to *de novo* analysis of protein populations isolated from tissues, but MS has become the preferred method for complex sample analysis⁴⁵. MS-based proteomics has become a popular field made possible by the availability of technical and conceptual advances in different fields. Mass spectrometers are used to measure the molecular mass of a peptide, and can even determine the structural features such as PTMs⁴⁶. In tandem MS, fragmentation through collision occurs, and MS measures the mass to charge ratio (m/z) of gas phase ions which provides information on structural features that can easily be inferred from the analysis of mass fragments either using software programs or by examining peaks on chromatograms⁴⁶. A MS is made of an ion source, a mass analyser that can measure the mass to charge ratio (m/z) of gas phase ions, and a detector that is able to register the number of ions at each m/z value⁴⁵. The two most common techniques used to ionize proteins for MS analysis are electron spray ionization (ESI) and matrix-assisted laser desorption/ionization (MALDI)^{45,47}; ESI is used in solutions that are later integrated into liquid chromatography systems, while MALDI is used in more simple dry, crystalline peptide mixtures^{45,47}. High performance liquid chromatography-tandem mass spectrometry (LC-MS/MS) is able to separate sample components by pumping a pressurized liquid solvent and protein solution through a column which is able to introduce the sample to MS⁴⁸. The mass analyser itself is key as its sensitivity, resolution, mass accuracy, and ability to generate an information rich database. The four basic types of mass analysers used in the majority of proteomic research are the ion trap, time-of-flight (TOF), quadrupole, and Fourier transform ion cyclotron (FT-MS) analyser; as each has their own strengths and weaknesses, they can sometimes be combined to maximize efficiency. The ESI mostly uses ion traps and triple quadrupole instruments to most efficiently analyze the complex protein mixtures. Ion trap analyzers capture ions for a certain time frame before applying MS/MS analysis; these ion traps are robust,

sensitive, and relatively inexpensive however they lack low mass accuracy^{49,50}. Two-dimensional ion traps store ions in a larger volume than traditional ion traps, allowing for increased resolution, and mass accuracy^{49,50}. The LC-MS instrumentation has evolved rapidly over the past twenty years, allowing biological proteomics to be accessible to a wider range of scientists. Over this time, technologies have increased analysis speed, precision, consistency, and sensitivity⁹. The development and application of MS to proteomics enabled the complex protein mixtures to be measured²⁵.

1.8 Study Aim

While several proteomic studies have undertaken the challenge of analyzing FFPE tissue, few have developed optimized protocols for studying human brain tissue, and even fewer examining FFPE human brain tissue. We believe an improved SDS free proteomic method applied to FFPE human brain tissue will produce a greater number of identified proteins compared to existing detergent-based methodology. This hypothesis will be tested in this research. The aim of this study is to assess an optimized method to produce reliable, robust and reproducible results from FFPE human brain tissue and perform a detailed comparison of the use of FFPE tissues, analyzed by LC-MS/MS, for shotgun proteomics. By analyzing tissue samples from human FFPE brain, archived specimens at the Griffith University School of Anatomy, we evaluated conditions used for tissue lysis, digestion, and the effects of the fixation time and storage duration on the number of proteins obtained during shotgun proteomic analysis on FFPE tissue. By comparing these protein identifications and experimental procedures to the existing FFPE tissue studies, the limitations due to protein quality are identified, optimised processes proposed, and future studies outlined.

2.0 Methods and Procedures

Proteins were extracted from ten different FFPE human brain samples, digested with trypsin, and analyzed with reverse phase LC-MS/MS (Figure 1).

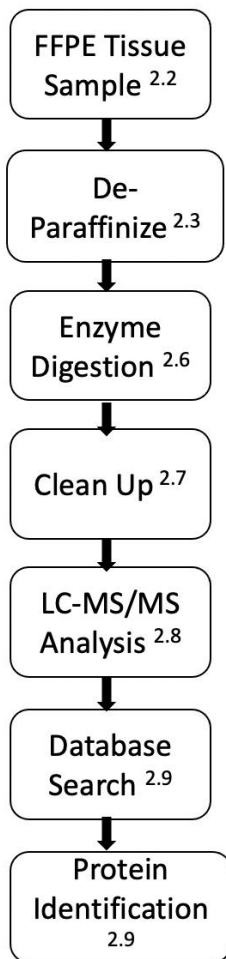


Figure 1: An overview of the study design and sample preparation using formalin-fixed paraffin embedded (FFPE) samples for protein identification by tandem mass spectrometry, referring to each methods section for further information.

2.1 Materials

Tris-HCl pH 8.5, guanidine hydrochloride (Gu-HCl), dithiothreitol (DTT), methanol (MeOH), ethanol (EtOH), trifluoroacetic acid (TFA), iodoacetamide (IAA), millipore water, bovine trypsin, Pierce C-18 filter tips, and a Coomassie Plus (Bradford) assay kit were obtained from ThermoFisher Scientific. Xylene, HPLC grade water, and chloroform were obtained from Sigma Aldrich. All solutions were prepared using HPLC grade water.

2.2 Brain Tissue Samples

This project focused on the analysis of human brains from archived specimens. The FFPE human brain tissue samples were obtained from the Griffith University School of Anatomy.

2.3 Deparaffinization Process

The samples followed the deparaffinization process by Sengüven et al. 2014⁵¹. Each paraffin embedded brain sample was washed twice with a 3x volume of prewarmed xylene for 45 minutes at 56°C. Tissues were then washed with a 2x volume, sequentially, of 95%, 75%, and 50% EtOH as previously described. The samples were rinsed with sterilized distilled water and dried at 37°C, until the surface was no longer wet, ready for sample preparation^{51,52}.

2.4 Proteomic Sample Preparation

The brain samples were homogenized in a 1x Gu-HCl based crosslinking reversal solution consisting of 10mM Tris-HCl pH8.5, 3M Gu-HCl, and 25mM DTT. One-part crosslinking reversal solution (CRS), just enough to cover each sample, was added to each tissue sample prior to sonication. The sample was sonicated using a Bioruptor Pico until the brain tissue had broken into pieces and there were no large visible clumps of tissue. These homogenates were placed in a rack at room temperature (22°C) for 10 minutes and the tissue particles were allowed to settle out.

To reduce the fat concentration in the samples, a methanol precipitation was completed as follows. One volume of protein homogenate solution was mixed with 10x volumes of methanol, and vortexed for 30 seconds. One volume of chloroform was added and vortexed for an additional 30 seconds. Afterward, 3x volumes of HPLC water were added and vortexed for 30 seconds then centrifuged at $20,000 \times g$ for 10 minutes at room temperature (22°C). The upper phase was discarded while keeping the white precipitate. Another 10x volumes of MeOH were added, and gently mixed without breaking the pellets⁵³. Finally, centrifugation at $20,000 \times g$ precipitated the proteins as pellets. The supernatant was discarded and the pellet was stored for further analysis⁵³.

2.5 Protein Quantification

The pellets were resuspended in CRS. Using a Bradford assay, the concentration of each sample was determined using the manufacturer's microplate instructions⁵⁴. The quantification was performed on a Multiskan SkyHigh Microplate Spectrophotometer.

2.6 Protein Digestion

The samples were then reduced with DTT. The lysate was diluted to 1µg/µL. Each sample was heated to 95°C for 10 minutes, then at 60°C for 2 hours. Samples were then alkylated with 0.5x volumes of 0.5M IAA, for a final concentration of 165mM IAA. These were incubated at 37°C for 20 minutes. Each reaction was diluted to 1/10 using sterile millipore water to reduce the guanidine and IAA to non-denaturing concentrations. To trypsinize, a 1:50 trypsin ratio was achieved by adding 400ng of trypsin to the 20µg of protein in 30µL of the CRS plus 270µL of sterile water. This was left to incubate overnight at 37°C. The following morning, trypsin was inactivated using TFA to a final concentration of 1%. The samples were centrifuged at 12,000 × g where the debris formed a pellet. The supernatant was transferred to a new sterile tube.

2.7 Protein Purification

The following is a modified protocol based on the manufacturer's recommendations for Pierce C18 tips (100µL bed, Catalog No. 87784). The pipettor was set to 100µL, with the filter tip attached tightly to the end of the pipettor. Each sample was adjusted to 0.1% TFA using a stock solution of 2.5% TFA. The tip was wet by aspirating 100µL with 50% MeOH in water, discarded and repeated once. The tip was equilibrated by aspirating 100µL with 0.1% TFA, discarded and repeated once. Into the tip, 100µL of each sample was aspirated and dispensed for 20 cycles. The tip was then rinsed by aspirating 100µL of 0.1% TFA/5% MeOH discarded and repeated once. The sample was eluted by aspirating 5-100µL of 0.1% formic acid in 80% MeOH, then dispensed into a glass autosampler vial.

2.8 LC-MS/MS Analysis

The samples were analysed using LC-MS/MS on a LC-Q Exactive Plus High-Resolution Accurate-mass (HR/AM) Orbitrap based mass spectrometer with a Accucore RP-MS LC column. A volume of 600ng were injected for each sample and run on a 3 hour gradient on Q Extractive plus. Each sample was run at 7°C with a flow rate of 3.000µL/min

with a MeOH gradient. The column was equilibrated with MeOH before injections. The mobile phase consisted of 80% MeOH and 0.1% TFA, and ran with a scan range of 200-2000 m/z.

2.9 Data Analysis

Acquired tandem mass spectra were identified using Sequest HT. Sequest HT was also used to generate abundance ratios and abundance variabilities. Trypsin was specified as the cleavage enzyme, allowing up to two missed cleavages and a mass tolerance of 4.5ppm for precursor ions and 0.5Da or 20ppm (Orbitrap) for tandem MS fragment ions. Carbamidomethylation of cysteine was used as a fixed modification, with oxidation of methionine, deamidation of asparagine and glutamine and acetylation of the protein N terminus used as variable modifications. Contaminants were excluded from the results prior to further analysis.

3.0 Results

Proteins were extracted from ten different FFPE human brain samples, digested with trypsin, and analyzed with reverse phase LC-MS/MS (Figure 1).

The cumulative totals for proteins identified was 3,594 proteins identified within the 10 samples, 3154 proteins with high confidence (Table 1). The study performed was compared to other papers to examine shotgun proteomic of FFPE tissue over the past fifteen years, as FFPE human brain tissue does is not widely studied in existing literature. Overall, Griesser et al⁵⁵ identified the most proteins (5677 total) within 104 fractions while Nazarian et al⁵⁶ identified the least at 188 proteins. The extraction materials were all FFPE, but the source material ranged from single cell lines to whole brain tissue samples. All proteins were imaged with liquid chromatography, with varying extraction and deparaffinization techniques.

Table 1: The comparison and examination of shotgun proteomic analysis of formalin-fixed, paraffin-embedded (FFPE) tissue.

Reference	Year	Tissue Type	FFPE Tissue Identification	Paraffin Removal Method	Extraction Method	Imaging Method
Crockett et al. ⁵⁷	2005	Human lymphoma cell line	324 proteins identified from 1 cell block	Xylene soaks	RIPA buffer (25mM Tris HCl/0.1% SDS/1% Triton X-100/1% sodium deoxycholate/0.15M NaCl/1mM EDTA) Trypsin digestion	LC-MS/MS
Palmer-Troy et al. ⁵⁸	2005	Human soft tissue from inner ear canal	123 proteins identified from 1 tissue sample	Heptane soaks	2% SDS/100mM ammonium bicarbonate/20mM DTT; ultrasonicated; heated 70°C 1h; trypsin digest	LC-MS
Nazarian et al. ⁵⁶	2008	Human paediatric brainstem glioma	188 proteins identified	Xylene soaks	100mM ammonium bicarbonate/30% ACN; trypsin digestion	LC-MS/MS
Sprung et al. ⁵⁹	2009	Human colon adenoma	2838 proteins identified	Sub-X washes	100mM ammonium bicarbonate/100mM pyridoxamine; heated 80°C for 2h; trypsin digestion	LC-MS/MS
Ga'Mez-Pozo et al. ⁶⁰	2011	Human non-small cell lung cancer and renal cell carcinoma	305 proteins identified	Xylene soaks	TRIzol separation; 40mM Tris/6M GdnHCl; heat 100°C 20min; 80°C 2h; 50mM ammonium bicarbonate; trypsin digest	LC-MS/MS
Griesser et al. ⁵⁵	2020	Human <i>substantia nigra</i> tissue	5677 proteins total identified within 104 fractions	Heptane soaks	2% SDS/300mM Tris-HCL/0.2% Rapigest/50mM ammonium bicarbonate; ultrasonicated; heated 80°C 2h; trypsin digest	LC-MS/MS
This Study	2021	Human brain tissue	3,594 different proteins total identified within 10 samples, 3154 proteins with high confidence	Xylene soaks	Sonicate in FFPE solution (10mM, 3M GuHCl, 25mM DTT); heated 95°C 10 min; heated 60°C 2h; Trypsin digestion	LC-MS/MS

Within the ten different FFPE human brain samples, the quantity of peptide recovered was measured (Table 2). From 20 μ g of each sample, the quantity of the recovered proteins ranged from 1.9 μ g to 8.7 μ g, while crosslinking reversal and trypsinization recovery ranged from 9.3% to 43.4%. The amount of trypsin cleavages ranged from 37.1% to 41.6%, and number of proteins found ranged from 2827 to 3166.

Table 2: An examination of the extraction and analysis efficacy of ten samples of FFPE human brain tissue.

Sample ID	Peptide Recovery from 20μg Digest (μg)	Recovery from Crosslinking Reversal & Trypsinization (%)	Missed Trypsin Cleavages (%)	Number of Proteins Found in Sample
HB343	4.8	23.9	41.4	3047
HB378	5.7	28.3	43	3079
HB382	8.7	43.4	39.6	3086
HB380-4	2.8	14.1	38.8	2827
HB374	1.9	9.3	37.9	3166
HB284	1.9	9.7	37.4	3068
HB383	4.2	20.8	37.1	3076
HB385	3.5	17.7	41.6	3072
HB373	3.4	17.1	41.3	3060
HB384	4.5	22.6	39.2	3111
Mean	4.14	20.69	39.73	3059.2

4.0 Discussion

Proteomic investigation of the human brain would contribute to our understanding of many topics from brain related injuries to disease. The analysis for protein expression in the human brain will also provide us deeper insight on how the human brain works and the physiological function within the different parts of the brain. This analysis, however, is very difficult as the human brain is incredibly complex, and the proteomic analysis of the brain tissue in itself is challenging^{7,8}. There have been numerous studies that examine mammalian brains, but comparatively few studies of the human brain^{4,7,8,13,16}. This is in part due to the limited availability of human brain tissue, and the condition of the tissue that is available for biomolecular analysis. This research has focused on the extraction of proteins using an improved SDS free proteomic method applied to FFPE human brain tissue to produce a greater number of identified proteins, allowing a more complete view of the human proteome. Since FFPE tissue is so abundant, and readily available in tissue brain banks around the world, working to understand then mitigate the abundant crosslinking and other associated challenges would tap into a rarely used resource.

Brain tissue is quite different from other tissues of the body. It is considered an anatomically complex tissue, and rich in fatty acids and lipids²². Though adult brains show a reasonable amount of symmetry in some regions such as the brain folds, there are variations in surface symmetry²². Cortical morphologies also vary with age, and some regions have specific changes after being afflicted by diseases such as Alzheimer's^{17,22}. In the samples used for this research, the region from where the tissue samples were collected from were not specified. We were also not supplied with the time between death of donor and removal of tissue, the state or nature of the donor death, the interval between death of the donor and body refrigeration, or the time period in storage^{29,57}. Time since death will have an impact on the quality of biomolecules that can be extracted from the tissue, the lack of documentation surrounding the study samples contributes to unknown factors and variability.

There are many ways to preserve tissue for analysis. The best-preserved material for biomolecular analysis, and the golden standard for most protein extractions, is frozen. However, tissue that is frozen immediately after death will form ice crystals, causing protein shearing; additional freeze thaw cycles add additional damage, but these

modifications are minimal compared to most preservation techniques^{19,23,24}. Many other preservation forms seen with brain material include embedding tissue into paraffin or celloidin blocks and sectioning^{25,61}. These methods have been for clinical purposes and diagnostics, which are not ideal for biochemical analysis including proteomics²⁶. Since preserved human brain tissue is not overly abundant, many researchers have focused on recovering biomolecules from these various preserved materials. In this research, FFPE samples were chosen since this material is the most common preservation method and most abundant storage material of brain tissue samples^{23,25,26}. These FFPE samples, however, are difficult to analyze due to the variable preparation methods and the cross-linkages caused by the formalin^{21,24,26,30}. The samples used in this research are from an unspecified time range, meaning their time of collections and specific preservation methods are unknown. While FFPE is the preservation medium used for all of the samples analyzed, the specific method of FFPE preparation, and age of preparation reagents have been variable. This variability allows us to test the robustness of the SDS free method.

There has been a great deal of research focused on the analysis of FFPE specimens from a variety of different tissues since they all will have similar challenges with cross-linkage and preservation. In the literature a wide range of sample types have been analyzed, varying from lymphoma cell lines, to brainstem tissue. Some of these studies were examined in this research, with one focused similarity; they were all preserved with FFPE (Table 1). The steps in the preservation of these tissues, regardless of their source material, impacts the quality of the specimen²¹. Since there is no standard method of completing the fixation process, and the samples are often fixed before they reach the research facility, these initial sample handling procedures are unable to be controlled. The thickness, volume of fixative, and time of fixation all have a significant impact²¹. If the tissue is overfixed or underfixed, this hinders the condition of the proteins and the ability to recover them. Any tissue that has been fixed for more than 36 hours decreases the quality of the biomolecules within, as can the tissue/formalin volume ratio²¹. The final step of paraffinization is also highly variable with factors such as quality of reagents, time, and temperature effecting sample integrity; if care is not taken to ensure each tissue is sufficiently dehydrated before moving forward with processing, residual water will not be replaced by paraffin, allowing continued tissue degradation over time⁶². Even the specific type of paraffin used can have

an impact on the biomolecule recovery. Synthetic paraffins, used widely in North America, may contain latex and other ingredients associated with a lower melting point; beeswax paraffins, used more widely in Eastern Europe, can contain pollen and other contaminants and are associated with a higher melting point⁶³. None of the studies examined provided specific information regarding the tissue fixation process; this prevents a critical examination of the downstream effect of the biomolecule recovery as it pertains to the tissue fixation (Table 1). If the biological samples, within Crockett et al (324 proteins)⁵⁷, Palmer-Troy et al. (123 proteins)⁵⁸, Nazarian et al. (188 proteins)⁵⁶ and Ga'Mez Pozo et al. (305 proteins)⁶⁰, had been over/under fixed, this could account for the lower number of identified proteins compared to the more recent studies of Sprung et al. (2838 proteins)⁶⁴, Griesser et al. (5677 proteins)⁵⁵ and this study (3594 proteins). Since certain tissue types, such as human brain tissue, are difficult to obtain, it is not always feasible to work with only materials with a well-documented preservation process. This preservation process, while differing between studies, could have also differed between individual donated specimens. This can account for some variation in number of proteins recovered in the different studies examined.

Within sample preparation and protein extraction, there is a wide range of diversity for what is considered ideal. Most of these methods include a tissue lysis step followed by a protein isolation step then purification prior to analysis. However, depending on the starting material, these methods may also include a deparaffinization step and a protein digestion step. This is particularly common if the samples start from FFPE fixed materials and are being analyzed through MS based procedures. Various detergents or surfactants have been used for tissue lysis. In the protein isolation step salting out methods have been used, that most frequently used Gu-HCl (Table 1), to separate large biomolecules such as proteins. Commercially available kits, such as FFPE PES and Qproteome, can also be used, but not optimized due to the lack of transparency surrounding the chemical compounds of proprietary reagents⁶⁰. In this study, proteins were processed in a traditionally based manner; they were homogenized in a Gu-HCl based solution, sonicated, then MeOH precipitated to reduce fat concentration in each protein samples. Since brain tissue is very fatty, this is a key step. The Gu-HCl solution was selected as it does not reduce the activity of trypsin used in later digestion, and it does not interfere with downstream MS analysis.

This reagent is used to denature the proteins by breaking salt bridges³³. In comparison, other methods in the literature have extracted proteins using ammonium bicarbonate/Acetonitrile (ACN), SDS, and commercially available reagent kits. Ammonium bicarbonate/ACN is used as a buffer that is able to maintain an alkaline pH that favours protein stability, and will not interfere with downstream digestion steps; it assists in removing the protein or proteins of interest from an MS-compatible stained gel³³. The SDS is very effective at disrupting cell membranes, and breaking down protein structures; it however must be removed using dialysis, filtration, or protein precipitation using ACN before downstream MS analysis⁶⁰. Many proteins are difficult to solubilize after precipitation, as seen with TRIzol separation techniques.

When using a sample with limited quantities such as diseased human tissue or human brain tissue some researchers, such as Ga'Mez-Pozo et al.⁶⁰ (Table 1), aim to retrieve DNA, RNA, and proteins from a single test. Producing a data set from a single clinical sample can provide a more complete view of the mechanisms surround protein regulation if the method is efficiently optimized. The use of TRIzol likely contributed to the low yield of identified proteins (305 proteins) for three main reasons. During a TRIzol separation, partial proteins can be irreversibly denatured by phenol and clump together; this will cause the proteins to enter the interphase layer during the phenol-chloroform extraction, and they will be more difficult to solubilize. In addition, any proteins found within the interphase and lower phase will be recovered during the DNA precipitation with EtOH, and some will be lost by coprecipitation with EtOH and insufficient precipitation with isopropanol³⁹. Lastly, the re-solubilization of the protein pellet uses 1% SDS which cannot resolubilize all of the proteins⁶⁵. These complications can lead to a bias in protein recovery in these samples and do not provide a complete biomolecule overview, even in the small group of identified proteins by Ga'Mez-Pozo et al.⁶⁰. This method was included in the comparison of methods in the literature since, if TRIzol separation could be further optimized, it can provide a larger multi-omics based view. The effective separation and subsequent testing of DNA, RNA, and proteins from the same sample could provide greater insight into a complex tissue, such as the human brain, and provide the opportunity to understand the flow of information that underlies the neurological processes.

There are many extraction methods that have been employed for the extraction of proteins from FFPE preserved biological materials. Certain general processing steps, such as deparaffinization of tissue section with xylene or a xylene substitute followed by heating in a buffer for a period of time, are required to extract analyzable quantities of peptides from FFPE materials. Extraction buffers can either be commercially available, such as Rapigest used in Griesser et al.⁵⁵, or homemade (Table 1). Rapigest, a commercially available buffer, showed high protein extraction efficiency, with 5677 proteins identified with the report of Griesser et al.⁵⁵. These results indicate that Rapigest is a reliable reagent to use for extraction, but if the chemical composition is unknown in pre-made buffers causing further development or improvement in future studies may be difficult. The other studies examined in Table 1 use a wide range of homemade buffers for extraction. These buffers range in chemical composition, and pH values, but most contain SDS to unfold and solubilize proteins (observed in Palmer-Troy et al.⁵⁸ and Griesser et al.⁵⁵). Heating a FFPE sample in a SDS based buffer, breaks the methylene crosslinks, since they are thought to be hydrolyzed by high temperatures. While SDS is very effective, it hinders downstream LC-MS analysis; prior to analysis, the SDS must be removed using dialysis or membrane filters to facilitate SDS/urea exchange^{31,66}. Other methods examined use detergent free extractions to ensure suitability for LC-MS analysis. This method relies heavily on heating samples at certain times and temperatures; this heating is necessary to allow for hydrolysis of methylene crosslinks⁶⁷. Right after deparaffinization, a sample is normally heated at a high temperature (90-100°C) for a short period of time (10-30 minutes), followed by a lower temperature, for a longer incubation time (Table 1). All of the studies examined, excluding Crockett et al.⁵⁷ had different stepwise heating methods. This study had relatively low protein identification from FFPE tissue (324 proteins), and the lack of stepwise heating methods could have influenced these results. The addition of DTT in a strong reducing environment is a common method used to reduce disulfide bonds, and seen in Palmer-Troy et al.⁵⁸ (123 proteins), and in this research (3594 proteins)⁶⁸.

All modern proteomic methods that are using MS analysis digest the proteins into peptides, and measure the total amount of identifiable proteins. Despite all of the extraction method variations seen in Table 1, all of the studies used trypsin for this enzymatic digestion. Tryptic digestion works through specific cleavage of proteins; it moves along

the amino acid chain until it reaches a lysine (Lys) and/or arginine (Arg) residue site to cleave². Since trypsin is a pure endopeptidase, this means that sequences with Arg or Lys in consecutive positions of the primary amino acid sequence will not be cut out completely. One or the other will be cut, leaving a tryptic site at the end of a peptide, which cannot be cut further. This means, on average the tryptic peptides that are detected using MS are slightly shorter than theoretical peptides². This type of digestion, for an optimal amount of time, results in high protein recovery even from FFPE tissue. Knowing the expected cleavage sites allows for consistent MS data analysis. This reliability, and minor time incubation variations between sample digestions indicates that this enzymatic digestion is likely not a major contributor to the varied protein recoveries between samples³⁵. Future studies could apply non-specific peptide cleavage using pepsin or chymotrypsin, but with existing methods, there is currently no protocol that is able to completely hydrolyze the methylene bridges formed during formaldehyde crosslinking.

Peptide preparation and clean-up methods, while functioning the same way, can have some internal variation. Because the proteome is so complex, there are many methods for preparing proteins samples for MS analysis. In the literature examined, after each protein is lysed, digested, reduced/alkylated using IAA, it is then purified. This reduction is important to ensure the peptides are broken down so they can fragment more easily. Standard C-18 cleanup and purification was performed using either C18 filter tips, or another variation of C18 filtration. This study used C18 filter tips, and increased binding cycles to allow for extra sample contact time, using ACN as the mobile phase. Either 0.1% FA or 0.1% TFA was used to complete the same job; to elute the proteins from the C18 filtration membrane. Each sample was suspended in an alcohol or ACN as a mobile phase, with no major difference noted between either selection.

Although most modern proteomic methods employ MS analysis, there are still a host of challenges. Even with optimized protein extraction methodology, formaldehyde crosslinking in FFPE samples affect processing of MS data. Formaldehyde crosslinking, depending on the distance between reactive groups, can cause different proteins to link together multiple times, showing a range of crosslinking. These linkages complicate the MS data interpretation, and the diverse cross-linkages reduce the number of molecules of a specific peptide, resulting in lower sensitivity. Though there are methods to reduce

crosslinking activity, as seen in the use of crosslinking reversal solution in this research, there is no method to effectively reverse all of the crosslinks. The formalin fixation used when preparing the FFPE samples causes difficulties when identifying the proteins with common search algorithms; these search algorithms are unable to assign a MS/MS spectrum containing two linked peptides to two sequences⁶⁹. With the initial MS, there is no existing algorithm that is able to include every tryptic peptide crosslinked to every other tryptic peptide that contains amino acids that might be able to crosslink and interact with formaldehyde⁷⁰. When adding the tandem MS scan, the problem is compounded. This study used a MS/MS spectral library (Spectrum Mill), containing MS/MS spectra for ionizable peptides to compare the crosslinked peptides to (Table 2)⁷¹. While this identified some crosslinking, there is still a lack of MS/MS analysis specifying PMTs that can be identified in a database⁷⁰.

As the field of proteomics expanded, and bioinformatics grew, software and database searches adapted. Each study examined used a different software for protein analysis including TurboSequest⁵⁸, MaxQuant⁵⁵, ZoomQuant⁵⁶, ScanSofter⁶⁴, Database for Annotation, Visualization and Integrated Discovery⁶⁰, and TurboSequest⁵⁷. They also used a variety of databases including Ref Sequence Protein Human database⁵⁸, UniProt^{55,57}, Sequest⁵⁶, IPI Human database⁶⁴, and MSDB database⁶⁰. This study used ScoreSequest to analyze data, and Sequest HT as the search database. Each of these studies, other than Crockett et al.⁵⁷ accounted for the trypsin digestion within the protein identification parameters. The more specific the modifications specified within the software, the more accurate the protein identification. This wide array of software selections suggests that software development and associated bioinformatics continue to adapt and change with the extraction optimizations.

The extraction of complex tissues, such as human brain tissue, has certain limitations. The peptides recovered in our study (Table 2) range from 1.9 μ g to 8.7 μ g within a 20 μ g digest. This indicates an efficient digestion methodology, however, as there are millions of proteins expected in the proteome of a given tissue, only a small percentage can be detected. Due to the compartmentalization of a complex organ such as the brain, many low abundance proteins are not detected¹⁶; protein abundance also greatly depends on the site of synthesis and localization⁷². The percentage recovery from crosslinking reversal and

trypsinization ranged from 9.3% to 43.4% (Table 2). This wide range could be due to variability in sample preservation techniques; the samples that had undergone their FFPE preservation and become overfixed would likely have a higher amount of crosslinking²¹. There is no information on the age of the donated brain samples, nor specific details on their fixation process which would allow for further trend investigation. Missed trypsin cleavages had a very small range, from 37.1% to 41.6%. These missed cleavages are measured by a bioinformatics tool from peptide peak lists that are obtained during MS analysis⁷³. The algorithm relies on the number of potential uncut peptide bonds that match the main specific hydrolytic enzyme, in this case trypsin. This allows improved database searching, validating protein identifications and providing higher quality MS data⁷³. This small range indicates the extraction and digestion was applied uniformly to all ten samples, and that the variation seen in protein identification arises due to source material. The number of proteins found within each samples ranges from 2827 to 3166. While this can be due in part, as previously stated, to the preservation methodology used on the sample prior to analysis or even the region of the brain sampled, it could also be due to PMTs. There are approximately 300 different PMTs that have been discovered that affect protein conformation, stability, location, binding interactions and function; these modifications are not always predictable from the amino acid sequence⁴⁵. These can be accounted for within software analysis to a certain degree, but more specialized software applications, such as CLIPPER on the Trans-Proteomic Pipeline, are very expensive and generate huge sets of data¹⁴.

5.0 Conclusion

The ability to analyze FFPE tissue from existing banked biomedical samples has enormous potential to further our understanding of many diseases. The existence of biomedical tissue banks containing thousands of samples means that further research into optimizing FFPE extraction methods is beneficial. Proteomic analysis of FFPE tissue is still a relatively new topic, with issues of removing crosslinks, accounting for modifications effecting mass spectrometry identification, and formaldehyde modification bioinformatic analysis not yet comprehensively addressed. Each study contributing to this question is beneficial in developing a method that is most efficient in the extraction and analysis of FFPE tissue. This research was successful at extracting proteomic information, without the use of SDS, from FFPE preserved human brains. The results in this research support the hypothesis that an improved SDS free proteomic method applied to FFPE human brain tissue can produce a greater number of identified proteins. However, the future of human brain research requires more detailed recording of sampling and fixation of tissue. The tissue banks need to include information regarding time of collection relative to cell death, a detailed method of fixation that has been applied to the tissues and the storage time for each sample then make this information available to the researchers. The researchers need to take this information into consideration when analysing and interpreting their results. In this study, it is difficult to know how much affect time since death, fixation method and storage time has had on the samples analysed. This information would enhance future research as degradation patterns, fixation artifacts and age-related artifacts may be identified and could even be incorporated into the bioinformatic analysis of the recovered proteins. This information may also assist in eliminating artifacts that could allow the research to focus on PTMs and other amino acid modifications that may have age related or physiologically relevant information. There is a lot of research potential in the proteomic and even multi-omic analysis of the human brain.

6.0 References

1. Floudas CA, Fung HK, McAllister SR, Mönnigmann M, Rajgaria R. Advances in protein structure prediction and de novo protein design: A review. *Chem Eng Sci.* 2006;61(3):966-988. doi:10.1016/J.CES.2005.04.009
2. Lovric J. *Introducing Proteomics : From Concepts to Sample Separation, Mass Spectrometry and Data Analysis.* Wiley-Blackwell; 2011.
3. Tyers, Mike; Mann M. From genomics to proteomics: One approach. *Nature.* 2003;422(24):28.
4. Marcus K, Schmidt O, Schaefer H, Hamacher M, van Hall A, Meyer HE. Proteomics-Application to the Brain. *Int Rev Neurobiol.* 2004;61:285-311. doi:10.1016/S0074-7742(04)61011-7
5. Wilkins MR, Sanchez J-C, Gooley AA, et al. Progress with Proteome Projects: Why all Proteins Expressed by a Genome Should be Identified and How To Do It. *Biotechnol Genet Eng Rev.* 1996;13(1):19-50. doi:10.1080/02648725.1996.10647923
6. Schubert OT, Röst HL, Collins BC, Rosenberger G, Aebersold R. Quantitative proteomics: Challenges and opportunities in basic and applied research. *Nat Protoc.* 2017;12(7):1289-1294. doi:10.1038/nprot.2017.040
7. Craft GE, Chen A, Nairn AC. Recent advances in quantitative neuroproteomics. *Methods.* 2013;61(3):186-218. doi:10.1016/J.YMETH.2013.04.008
8. Bayés A, Grant SGN. Neuroproteomics: understanding the molecular organization and complexity of the brain. *Nat Rev Neurosci.* 2009;10(9):635-646. doi:10.1038/nrn2701
9. Mallick P, Kuster B. Proteomics: A pragmatic perspective. *Nat Biotechnol.* 2010;28(7):695-709. doi:10.1038/nbt.1658
10. Schwanhäusser B, Busse D, Li N, et al. Global quantification of mammalian gene expression control. *Nature.* 2011;473(7347):337-342. doi:10.1038/nature10098
11. Vogel C, Marcotte EM. Insights into the regulation of protein abundance from proteomic and transcriptomic analyses. *Nat Rev Genet.* 2012;13(4):227-232. doi:10.1038/nrg3185
12. Futcher B, Latter GI, Monardo P, McLaughlin CS, Garrels JI. A Sampling of the Yeast Proteome. *Mol Cell Biol.* 1999;19(11):7357-7368. doi:10.1128/mcb.19.11.7357
13. Hamacher M, Meyer HE. HUPO Brain Proteome Project: aims and needs in

- proteomics. *Expert Rev Proteomics*. 2005;2(1):1-3. doi:10.1586/14789450.2.1.1
14. Rogers LD, Overall CMC. Proteolytic post-translational modification of proteins: Proteomic tools and methodology. *Mol Cell Proteomics*. 2013;12(12):3532-3542. doi:10.1074/mcp.M113.031310
 15. Hipkiss AR. Accumulation of altered proteins and ageing: Causes and effects. *Exp Gerontol*. 2006;41(5):464-473. doi:10.1016/J.EXGER.2006.03.004
 16. Lubec G, Krapfenbauer K, Fountoulakis M. Proteomics in brain research: Potentials and limitations. *Prog Neurobiol*. 2003;69(3):193-211. doi:10.1016/S0301-0082(03)00036-4
 17. Carlos AF, Poloni TE, Medici V, Chikhldze M, Guaita A, Ceroni M. From brain collections to modern brain banks: A historical perspective. *Alzheimer's Dement Transl Res Clin Interv*. 2019;5:52-60. doi:10.1016/j.trci.2018.12.002
 18. Gere C. A Brief History of Brain Archiving. *J Hist Neurosci*. 2003;12(4):396-410. doi:10.1076/jhin.12.4.396.27916
 19. Kasper BS, Taylor DC, Janz D, et al. Neuropathology of epilepsy and psychosis: The contributions of J.A.N. Corsellis. *Brain*. 2010;133(12):3795-3805. doi:10.1093/brain/awq235
 20. Schoefert AK. Neither Physicians Nor Surgeons: Whither Neuropathological Skill in Post-war England? *Med Hist*. 2015;59(3):404-420. doi:10.1017/mdh.2015.27
 21. Hewitt SM, Lewis FA, Cao Y, et al. Tissue Handling and Specimen Preparation in Surgical Pathology. *Arch Pathol*. 2008.
 22. Hynd MR, Lewohl JM, Scott HL, Dodd PR. Biochemical and molecular studies using human autopsy brain tissue. *J Neurochem*. 2003;85(3):543-562. doi:10.1046/j.1471-4159.2003.01747.x
 23. Samarasekera N, Salman RAS, Huitinga I, et al. Brain banking for neurological disorders. *Lancet Neurol*. 2013;12(11):1096-1105. doi:10.1016/S1474-4422(13)70202-3
 24. Cao E, Chen Y, Cui Z, Foster PR. Effect of freezing and thawing rates on denaturation of proteins in aqueous solutions. *Biotechnol Bioeng*. 2003;82(6):684-690. doi:10.1002/bit.10612
 25. Reimel BA, Pan S, May DH, et al. Proteomics on Fixed Tissue Specimens - A Review. *Curr Proteomics*. 2009;6(1):63-69. doi:10.2174/157016409787847420

26. Maes E, Broeckx V, Mertens I, et al. Analysis of the formalin-fixed paraffin-embedded tissue proteome: Pitfalls, challenges, and future perspectives. *Amino Acids*. 2013;45(2):205-218. doi:10.1007/s00726-013-1494-0
27. Ronci M, Bonanno E, Colantoni A, et al. Protein unlocking procedures of formalin-fixed paraffin-embedded tissues: Application to MALDI-TOF Imaging MS investigations. *Proteomics*. 2008;8(18):3702-3714. doi:10.1002/pmic.200701143
28. Crockett DK, Lin Z, Vaughn CP, Lim MS, Elenitoba-Johnson KSJ. Identification of proteins from formalin-fixed paraffin-embedded cells by LC-MS/MS. *Lab Investig*. 2005;85(11):1405-1415. doi:10.1038/labinvest.3700343
29. Srinivasan M, Sedmak D, Jewell S. Effect of fixatives and tissue processing on the content and integrity of nucleic acids. *Am J Pathol*. 2002;161(6):1961-1971. doi:10.1016/S0002-9440(10)64472-0
30. Start RD, Cross SS, Smith JH. Assessment of specimen fixation in a surgical pathology service. *J Clin Pathol*. 1992;45(6):546-547. doi:10.1136/jcp.45.6.546
31. Tanca A, Pagnozzi D, Addis MF. Setting proteins free: Progresses and achievements in proteomics of formalin-fixed, paraffin-embedded tissues. *Proteomics - Clin Appl*. 2012;6(1-2):7-21. doi:10.1002/prca.201100044
32. Nirmalan N, Nirmalan NJ, Harnden P, Selby PJ, Banks RE. Mining the archival formalin-fixed paraffin-embedded tissue proteome: Opportunities and challenges. 2017. doi:10.1039/b800098k
33. Dapic I, Baljeu-Neuman L, Uwugiaren N, Kers J, Goodlett DR, Corthals GL. Proteome analysis of tissues by mass spectrometry. *Mass Spectrom Rev*. 2019;38(4-5):403-441. doi:10.1002/mas.21598
34. Coons AH, Creech HJ, Jones RN. Immunological Properties of an Antibody Containing a Fluorescent Group. *Exp Biol Med*. 1941;47(2):200-202. doi:10.3181/00379727-47-13084P
35. Comai L, Katz JE, Editors PM. *Proteomics Methods and Protocols Methods in Molecular Biology 1550*.
36. P C. A reagent for the single-step simultaneous isolation of RNA, DNA and proteins from cell and tissue samples. *Biotechniques*. 1993;15(3):532-534, 536-537. <http://europepmc.org/abstract/MED/7692896/reload=0%5Chttp://europepmc.org/abstrac>

t/MED/7692896/reload=0;jsessionid=2fhZUXqmPLgrQrYeJp1.4%5Cnhttp://www.ncbi.nlm.nih.gov/pubmed/7692896.

37. Chomczynski P, Sacchi N. The single-step method of RNA isolation by acid guanidinium thiocyanate-phenol-chloroform extraction: Twenty-something years on. *Nat Protoc.* 2006;1(2):581-585. doi:10.1038/nprot.2006.83
38. Pop C, Ameling S, Empen K, et al. Proteome analysis of heart biopsies using a TRIzol-based protein extraction. *Clin Chim Acta.* 2015;438:246-247. doi:10.1016/j.cca.2014.08.033
39. Yamaguchi H, Hasegawa K, Esumi M. Protein from the fraction remaining after RNA extraction is useful for proteomics but care must be exercised in its application. *Exp Mol Pathol.* 2013;95(1):46-50. doi:10.1016/j.yexmp.2013.05.002
40. Kruger NJ. The Bradford Method. *Basic Protein Pept Protoc.* 2009:17-24.
41. Chial HJ, Thompson HB, Splittgerber AG. A spectral study of the charge forms of Coomassie blue G. *Anal Biochem.* 1993;209(2):258-266. doi:10.1006/abio.1993.1117
42. Congdon RW, Muth GW, Splittgerber AG. The binding interaction of coomassie blue with proteins. *Anal Biochem.* 1993;213(2):407-413. doi:10.1006/abio.1993.1439
43. Pierce J, Suelter CH. An evaluation of the Coomassie brilliant blue G-250 dye-binding method for quantitative protein determination. *Anal Biochem.* 1977;81(2):478-480. doi:10.1016/0003-2697(77)90723-0
44. Read SM, Northcote DH. Minimization of variation in the response to different proteins of the Coomassie blue G dye-binding assay for protein. *Anal Biochem.* 1981;116(1):53-64. doi:10.1016/0003-2697(81)90321-3
45. Aebersold R, Mann M. Mass Spectrometry-Based Proteomics. *Nature.* 2003;422(March).
46. Domon B, Aebersold R. Mass spectrometry and protein analysis. *Science.* 2006;312(5771):212-217. doi:10.1126/science.1124619
47. FENN JB, MANN M, MENG CK, WONG SF, WHITEHOUSE CM. ChemInform Abstract: Electrospray Ionization for Mass Spectrometry of Large Biomolecules. *ChemInform.* 1990;21(5). doi:10.1002/chin.199005359
48. Peng JM, Elias JE, Thoreen CC, Licklider LJ, Gygi SP. Evaluation of multidimensional chromatography coupled with tandem mass spectrometry (LC/LC-MS.

J Proteome Res. 2003;2(1):43-50.

49. Hager JW. A new linear ion trap mass spectrometer. *Rapid Commun Mass Spectrom.* 2002;16(6):512-526. doi:10.1002/rcm.607
50. Schwartz JC, Senko MW. <Journal of the American Society for Mass Spectrometry 2002 Schwartz-1.pdf>. 2002;0305(02).
51. Sengüven B, Baris E, Oygur T, Berktaş M. Comparison of methods for the extraction of DNA from formalin-fixed, paraffin-embedded archival tissues. *Int J Med Sci.* 2014;11(5):494-499. doi:10.7150/ijms.8842
52. Goelz SE, Hamilton SR, Vogelstein B. Purification of DNA from formaldehyde fixed and paraffin embedded human tissue. *Biochem Biophys Res Commun.* 1985;130(1):118-126. doi:10.1016/0006-291X(85)90390-0
53. Shahinuzzaman ADA, Chakrabarty JK, Fang Z, Smith D, Kamal AHM, Chowdhury SM. Improved in-solution trypsin digestion method for methanol–chloroform precipitated cellular proteomics sample. *J Sep Sci.* 2020;43(11):2125-2132. doi:10.1002/jssc.201901273
54. Thermo Scientific. MAN011203_CoomassiePlus_Bradford_Assay_Kit. *Thermo Sci Protoc.* 2018;0747(23236).
55. Griesser E, Wyatt H, Have S Ten, Stierstorfer B, Lenter M, Lamond AI. Quantitative Profiling of the Human Substantia Nigra Proteome from Laser-capture Microdissected FFPE Tissue. *Mol Cell Proteomics.* 2020;19(5):839-851. doi:10.1074/mcp.RA119.001889
56. Nazarian J, Santi M, Hathout Y, MacDonald TJ. Protein profiling of formalin fixed paraffin embedded tissue: Identification of potential biomarkers for pediatric brainstem glioma. *Proteomics - Clin Appl.* 2008;2(6):915-924. doi:10.1002/prca.200780061
57. Crockett DK, Lin Z, Vaughn CP, Lim MS, Elenitoba-Johnson KSJ. Identification of proteins from formalin-fixed paraffin-embedded cells by LC-MS/MS. *Lab Investig.* 2005;85(11):1405-1415. doi:10.1038/labinvest.3700343
58. Palmer-Toy DE, Krastins B, Sarracino DA, Nadol JB, Merchant SN. Efficient method for the proteomic analysis of fixed and embedded tissues. *J Proteome Res.* 2005;4(6):2404-2411. doi:10.1021/pr050208p
59. Sprung RW, Brock JWC, Tanksley JP, et al. Equivalence of Protein Inventories

- Obtained from Formalin-fixed Paraffin-embedded and Frozen Tissue in Multidimensional Liquid Chromatography-Tandem Mass Spectrometry Shotgun Proteomic Analysis. *Mol Cell Proteomics*. 2009;8(8):1988-1998. doi:10.1074/mcp.M800518-MCP200
60. Gámez-Pozo A, Sánchez-Navarro I, Calvo E, et al. Protein phosphorylation analysis in archival clinical cancer samples by shotgun and targeted proteomics approaches. *Mol Biosyst*. 2011;7(8):2368-2374. doi:10.1039/c1mb05113j
61. Maes E, Valkenburg D, Mertens I, et al. Proteomic analysis of formalin-fixed paraffin-embedded colorectal cancer tissue using tandem mass tag protein labeling. *Mol Biosyst*. 2013;9(11):2686-2695. doi:10.1039/c3mb70177h
62. Fricain JC, Rouais F, Dupuy B. A two-step embedding process for better preservation of soft tissue surrounding coral implants. *J Biomed Mater Res*. 1996;33(1):23-27. doi:10.1002/(SICI)1097-4636(199621)33:1<23::AID-JBM4>3.0.CO;2-O
63. Fergenbaum JH, Garcia-Closas M, Hewitt SM, Lissowska J, Sakoda LC, Sherman ME. Loss of antigenicity in stored sections of breast cancer tissue microarrays. *Cancer Epidemiol Biomarkers Prev*. 2004;13(4):667-672. doi:10.1016/s1040-1741(08)70064-2
64. Sprung RW, Brock JWC, Tanksley JP, et al. Equivalence of protein inventories obtained from formalin-fixed paraffin-embedded and frozen tissue in multidimensional liquid chromatography-tandem mass spectrometry shotgun proteomic analysis. *Mol Cell Proteomics*. 2009;8(8):1988-1998. doi:10.1074/mcp.M800518-MCP200
65. Hummon AB, Lim SR, Difilippantonio MJ, Ried T. Isolation and solubilization of proteins after TRIZOL® extraction of RNA and DNA from patient material following prolonged storage. *Biotechniques*. 2007;42(4):467-472. doi:10.2144/000112401
66. Wiśniewski JR, Zougman A, Nagaraj N, Mann M. Universal sample preparation method for proteome analysis. *Nat Methods*. 2009;6(5):359-362. doi:10.1038/nmeth.1322
67. O'Rourke MB, Padula MP. Analysis of formalin-fixed, paraffin-embedded (FFPE) tissue via proteomic techniques and misconceptions of antigen retrieval. *Biotechniques*. 2016;60(5):229-238. doi:10.2144/000114414
68. Addis MF, Tanca A, Pagnozzi D, et al. Generation of high-quality protein extracts from formalin-fixed, paraffin-embedded tissues. *Proteomics*. 2009;9(15):3815-3823. doi:10.1002/pmic.200800971
69. Küster B, Mortensen P, Andersen JS, Mann M. Mass spectrometry allows direct

- identification of proteins in large genomes. *Proteomics*. 2001;1(5):641-650. doi:10.1002/1615-9861(200104)1:5<641::AID-PROT641>3.0.CO;2-R
70. Lam H, Deutsch EW, Eddes JS, et al. Development and validation of a spectral library searching method for peptide identification from MS/MS. *Proteomics*. 2007;7(5):655-667. doi:10.1002/pmic.200600625
71. Metz B, Kersten GFA, Hoogerhout P, et al. Identification of formaldehyde-induced modifications in proteins: Reactions with model peptides. *J Biol Chem*. 2004;279(8):6235-6243. doi:10.1074/jbc.M310752200
72. Carlyle BC, Kitchen RR, Kanyo JE, et al. A multiregional proteomic survey of the postnatal human brain. *Nat Neurosci*. 2017;20(12):1787-1795. doi:10.1038/s41593-017-0011-2
73. Siepen JA, Keevil EJ, Knight D, Hubbard SJ. Prediction of missed cleavage sites in tryptic peptides aids protein identification in proteomics. *J Proteome Res*. 2007;6(1):399-408. doi:10.1021/pr060507u

7.0 Appendix

Appendix 1.1 Description of all identified proteins within the 10 formalin fixed paraffin embedded FFPE human brain samples within the study that were extracted using a modified traditional GuHCl based extraction, then analyzed by LC-MS/MS.

Identified Protein Description
Isoform 2 of Spectrin alpha chain, non-erythrocytic 1 [OS=Homo sapiens]
Isoform 3 of Spectrin alpha chain, non-erythrocytic 1 [OS=Homo sapiens]
Spectrin beta chain, non-erythrocytic 1 [OS=Homo sapiens]
Isoform 2 of Plectin [OS=Homo sapiens]
Dihydropyrimidinase-related protein 2 [OS=Homo sapiens]
Sodium/potassium-transporting ATPase subunit alpha-3 [OS=Homo sapiens]
Clathrin heavy chain 1 [OS=Homo sapiens]
Glial fibrillary acidic protein [OS=Homo sapiens]
glyceraldehyde-3-phosphate dehydrogenase [OS=Homo sapiens]
Tubulin beta-2A chain [OS=Homo sapiens]
Serum albumin [OS=Homo sapiens]
Actin, cytoplasmic 1 [OS=Homo sapiens]
Actin, cytoplasmic 2 [OS=Homo sapiens]
Tubulin beta-2B chain [OS=Homo sapiens]
Sodium/potassium-transporting ATPase subunit alpha-1 [OS=Homo sapiens]
Tubulin beta-4B chain [OS=Homo sapiens]
fructose-bisphosphate aldolase A [OS=Homo sapiens]
Tubulin beta-4A chain [OS=Homo sapiens]
Neurofilament medium polypeptide [OS=Homo sapiens]
Sodium/potassium-transporting ATPase subunit alpha-2 [OS=Homo sapiens]
Pyruvate kinase PKM [OS=Homo sapiens]
Isoform M1 of Pyruvate kinase PKM [OS=Homo sapiens]
tubulin beta chain [OS=Homo sapiens]
tubulin alpha-1A chain [OS=Homo sapiens]
ATP synthase subunit beta, mitochondrial [OS=Homo sapiens]
alpha-enolase [OS=Homo sapiens]
Gamma-enolase [OS=Homo sapiens]
Synapsin-1 [OS=Homo sapiens]
Tubulin alpha-4A chain [OS=Homo sapiens]
Tubulin alpha-1C chain [OS=Homo sapiens]
Ankyrin-2 [OS=Homo sapiens]
Versican core protein [OS=Homo sapiens]
2',3'-cyclic-nucleotide 3'-phosphodiesterase [OS=Homo sapiens]
Isoform V1 of Versican core protein [OS=Homo sapiens]
Isoform IB of Synapsin-1 [OS=Homo sapiens]
Fructose-bisphosphate aldolase C [OS=Homo sapiens]

Neurofilament light polypeptide [OS=Homo sapiens]
V-type proton ATPase subunit B, brain isoform [OS=Homo sapiens]
Heat shock cognate 71 kDa protein [OS=Homo sapiens]
Spectrin beta chain, non-erythrocytic 2 [OS=Homo sapiens]
Isoform 2 of Triosephosphate isomerase [OS=Homo sapiens]
alpha-internexin [OS=Homo sapiens]
microtubule-associated protein 1B [OS=Homo sapiens]
Tenascin-R [OS=Homo sapiens]
Cytoplasmic dynein 1 heavy chain 1 [OS=Homo sapiens]
tubulin beta-3 chain [OS=Homo sapiens]
Creatine kinase B-type [OS=Homo sapiens]
heat shock 70 kDa protein 1A [OS=Homo sapiens]
Cytochrome b-c1 complex subunit 2, mitochondrial [OS=Homo sapiens]
ATP synthase subunit alpha, mitochondrial [OS=Homo sapiens]
Isoform 9 of Neurofascin [OS=Homo sapiens]
Collagen alpha-1(I) chain [OS=Homo sapiens]
Neural cell adhesion molecule 1 [OS=Homo sapiens]
Aconitate hydratase, mitochondrial [OS=Homo sapiens]
Actin, alpha cardiac muscle 1 [OS=Homo sapiens]
V-type proton ATPase catalytic subunit A [OS=Homo sapiens]
Contactin-1 [OS=Homo sapiens]
Brain acid soluble protein 1 [OS=Homo sapiens]
Syntaxin-binding protein 1 [OS=Homo sapiens]
60 kDa heat shock protein, mitochondrial [OS=Homo sapiens]
Isoform XA of Plasma membrane calcium-transporting ATPase 4 [OS=Homo sapiens]
Plasma membrane calcium-transporting ATPase 4 [OS=Homo sapiens]
Isoform 5 of Neurofascin [OS=Homo sapiens]
microtubule-associated protein 2 [OS=Homo sapiens]
Ubiquitin-like modifier-activating enzyme 1 [OS=Homo sapiens]
Heat shock protein HSP 90-alpha [OS=Homo sapiens]
Hexokinase-1 [OS=Homo sapiens]
Creatine kinase U-type, mitochondrial [OS=Homo sapiens]
Isoform 2 of Syntaxin-binding protein 1 [OS=Homo sapiens]
Gelsolin [OS=Homo sapiens]
Neuromodulin [OS=Homo sapiens]
Tubulin alpha-8 chain [OS=Homo sapiens]
Hemoglobin subunit beta [OS=Homo sapiens]
Transitional endoplasmic reticulum ATPase [OS=Homo sapiens]
Microtubule-associated protein 1A [OS=Homo sapiens]
Glutamate dehydrogenase 1, mitochondrial [OS=Homo sapiens]
Vesicle-fusing ATPase [OS=Homo sapiens]

Guanine nucleotide-binding protein G(I)/G(S)/G(T) subunit beta-1 [OS=Homo sapiens]
phosphoglycerate kinase 1 [OS=Homo sapiens]
Collagen alpha-2(I) chain [OS=Homo sapiens]
14-3-3 protein zeta/delta [OS=Homo sapiens]
Guanine nucleotide-binding protein G(O) subunit alpha [OS=Homo sapiens]
Transketolase [OS=Homo sapiens]
Ubiquitin carboxyl-terminal hydrolase isozyme L1 [OS=Homo sapiens]
Neurofilament heavy polypeptide [OS=Homo sapiens]
Calcium/calmodulin-dependent protein kinase type II subunit alpha [OS=Homo sapiens]
Isoform 2 of Dynamin-1 [OS=Homo sapiens]
Neurocan core protein [OS=Homo sapiens]
Hemoglobin subunit alpha [OS=Homo sapiens]
Dynamin-1 [OS=Homo sapiens]
Protein bassoon [OS=Homo sapiens]
Malate dehydrogenase, mitochondrial [OS=Homo sapiens]
Dihydropyrimidinase-related protein 1 [OS=Homo sapiens]
Vimentin [OS=Homo sapiens]
Isoform 3 of Dynamin-1 [OS=Homo sapiens]
Isoform LCRMP-1 of Dihydropyrimidinase-related protein 1 [OS=Homo sapiens]
Isoform 6 of Neuronal cell adhesion molecule [OS=Homo sapiens]
NADH-ubiquinone oxidoreductase 75 kDa subunit, mitochondrial [OS=Homo sapiens]
Isoform 3 of Alpha-actinin-1 [OS=Homo sapiens]
Brevican core protein [OS=Homo sapiens]
Aspartate aminotransferase, cytoplasmic [OS=Homo sapiens]
Isoform WA of Plasma membrane calcium-transporting ATPase 2 [OS=Homo sapiens]
Heat shock protein HSP 90-beta [OS=Homo sapiens]
phosphatidylethanolamine-binding protein 1 [OS=Homo sapiens]
Isoform Alpha-2 of Guanine nucleotide-binding protein G(o) subunit alpha [OS=Homo sapiens]
Superoxide dismutase [Cu-Zn] [OS=Homo sapiens]
Isoform Short of 14-3-3 protein beta/alpha [OS=Homo sapiens]
Immunoglobulin superfamily member 8 [OS=Homo sapiens]
glucose-6-phosphate isomerase [OS=Homo sapiens]
MICOS complex subunit Mic60 [OS=Homo sapiens]
Hyaluronan and proteoglycan link protein 2 [OS=Homo sapiens]
Rab GDP dissociation inhibitor alpha [OS=Homo sapiens]
sodium/potassium-transporting ATPase subunit alpha-4 [OS=Homo sapiens]
Plasma membrane calcium-transporting ATPase 1 [OS=Homo sapiens]
Band 4.1-like protein 3 [OS=Homo sapiens]
Plasma membrane calcium-transporting ATPase 2 [OS=Homo sapiens]

Isoform B of Calcium/calmodulin-dependent protein kinase type II subunit alpha [OS=Homo sapiens]
Septin-7 [OS=Homo sapiens]
14-3-3 protein gamma [OS=Homo sapiens]
Heat shock-related 70 kDa protein 2 [OS=Homo sapiens]
Stress-70 protein, mitochondrial [OS=Homo sapiens]
78 kDa glucose-regulated protein [OS=Homo sapiens]
L-lactate dehydrogenase B chain [OS=Homo sapiens]
Isoform LCRMP-4 of Dihydropyrimidinase-related protein 3 [OS=Homo sapiens]
Cytochrome b-c1 complex subunit 1, mitochondrial [OS=Homo sapiens]
Isoform 4 of Tyrosine-protein phosphatase non-receptor type substrate 1 [OS=Homo sapiens]
Peroxiredoxin-2 [OS=Homo sapiens]
histone H3.3 [OS=Homo sapiens]
Histone H1.4 [OS=Homo sapiens]
Histone H2A type 3 [OS=Homo sapiens]
Histone H1.2 [OS=Homo sapiens]
Histone H2A type 2-C [OS=Homo sapiens]
Tubulin beta-6 chain [OS=Homo sapiens]
Cell adhesion molecule 3 [OS=Homo sapiens]
Fatty acid synthase [OS=Homo sapiens]
Isoform 2 of V-type proton ATPase 116 kDa subunit a isoform 1 [OS=Homo sapiens]
Isoform Tau-B of Microtubule-associated protein tau [OS=Homo sapiens]
14-3-3 protein epsilon [OS=Homo sapiens]
Alpha-crystallin B chain [OS=Homo sapiens]
Isoform Tau-F of Microtubule-associated protein tau [OS=Homo sapiens]
Serotransferrin [OS=Homo sapiens]
Glycogen phosphorylase, brain form [OS=Homo sapiens]
Neural cell adhesion molecule L1 [OS=Homo sapiens]
histone H4 [OS=Homo sapiens]
Malate dehydrogenase, cytoplasmic [OS=Homo sapiens]
protein/nucleic acid deglycase DJ-1 [OS=Homo sapiens]
Phosphoglycerate mutase 1 [OS=Homo sapiens]
Isoform Tau-D of Microtubule-associated protein tau [OS=Homo sapiens]
Calmodulin [OS=Homo sapiens]
Microtubule-associated protein tau [OS=Homo sapiens]
amphiphysin [OS=Homo sapiens]
Serine/threonine-protein phosphatase 2B catalytic subunit alpha isoform [OS=Homo sapiens]
Isoform Fetal-tau of Microtubule-associated protein tau [OS=Homo sapiens]
Alpha-actinin-4 [OS=Homo sapiens]
Histone H2A type 2-B [OS=Homo sapiens]

tubulin beta-8 chain [OS=Homo sapiens]
Myc box-dependent-interacting protein 1 [OS=Homo sapiens]
Syntaxin-1B [OS=Homo sapiens]
immunoglobulin kappa constant [OS=Homo sapiens]
Isoform IIB of Myc box-dependent-interacting protein 1 [OS=Homo sapiens]
Histone H2B type 2-F [OS=Homo sapiens]
intercellular adhesion molecule 5 [OS=Homo sapiens]
annexin A6 [OS=Homo sapiens]
Isoform 4 of Myelin basic protein [OS=Homo sapiens]
Collagen alpha-3(VI) chain [OS=Homo sapiens]
Protein kinase C and casein kinase substrate in neurons protein 1 [OS=Homo sapiens]
peptidyl-prolyl cis-trans isomerase A [OS=Homo sapiens]
14-3-3 protein theta [OS=Homo sapiens]
Isoform 1 of Calcium/calmodulin-dependent protein kinase type II subunit beta [OS=Homo sapiens]
voltage-dependent anion-selective channel protein 1 [OS=Homo sapiens]
Isoform 4 of Myosin-10 [OS=Homo sapiens]
Rab GDP dissociation inhibitor beta [OS=Homo sapiens]
Isoform 3 of Myelin basic protein [OS=Homo sapiens]
14-3-3 protein eta [OS=Homo sapiens]
Filamin-A [OS=Homo sapiens]
Heat shock 70 kDa protein 1-like [OS=Homo sapiens]
Fascin [OS=Homo sapiens]
Histone H2B type 1-K [OS=Homo sapiens]
Disks large homolog 4 [OS=Homo sapiens]
Microtubule-associated protein 6 [OS=Homo sapiens]
Histone H2B type 2-E [OS=Homo sapiens]
Synapsin-2 [OS=Homo sapiens]
Sodium/potassium-transporting ATPase subunit beta-1 [OS=Homo sapiens]
Myosin-9 [OS=Homo sapiens]
Tubulin polymerization-promoting protein [OS=Homo sapiens]
Aldehyde dehydrogenase, mitochondrial [OS=Homo sapiens]
serine/threonine-protein phosphatase 2A 65 kDa regulatory subunit A alpha isoform [OS=Homo sapiens]
Lamin-B2 [OS=Homo sapiens]
Beta-actin-like protein 2 [OS=Homo sapiens]
syntaxin-1A [OS=Homo sapiens]
Tubulin beta-8 chain-like protein LOC260334 [OS=Homo sapiens]
Aspartate aminotransferase, mitochondrial [OS=Homo sapiens]
T-complex protein 1 subunit beta [OS=Homo sapiens]
Isoform XA of Plasma membrane calcium-transporting ATPase 3 [OS=Homo sapiens]
Guanine nucleotide-binding protein G(I)/G(S)/G(T) subunit beta-2 [OS=Homo sapiens]

sapiens]
AP-2 complex subunit alpha-1 [OS=Homo sapiens]
Histone H1.1 [OS=Homo sapiens]
Isoform 4 of Alpha-adducin [OS=Homo sapiens]
Ferritin heavy chain [OS=Homo sapiens]
Isoform 2 of Spectrin beta chain, erythrocytic [OS=Homo sapiens]
Succinyl-CoA:3-ketoacid coenzyme A transferase 1, mitochondrial [OS=Homo sapiens]
Isoform IIb of Synapsin-2 [OS=Homo sapiens]
Ubiquitin-40S ribosomal protein S27a [OS=Homo sapiens]
Basement membrane-specific heparan sulfate proteoglycan core protein [OS=Homo sapiens]
Succinate dehydrogenase [ubiquinone] flavoprotein subunit, mitochondrial [OS=Homo sapiens]
Complement C4-A [OS=Homo sapiens]
heterogeneous nuclear ribonucleoproteins A2/B1 [OS=Homo sapiens]
Hemoglobin subunit delta [OS=Homo sapiens]
Isoform 2 of Synaptotagmin-1 [OS=Homo sapiens]
V-type proton ATPase subunit E 1 [OS=Homo sapiens]
Isoform Delta 8 of Calcium/calmodulin-dependent protein kinase type II subunit delta [OS=Homo sapiens]
Alpha-adducin [OS=Homo sapiens]
Isoform 2 of AP-2 complex subunit alpha-2 [OS=Homo sapiens]
puromycin-sensitive aminopeptidase [OS=Homo sapiens]
AP-2 complex subunit alpha-2 [OS=Homo sapiens]
Isoform 4 of Tropomyosin alpha-3 chain [OS=Homo sapiens]
immunoglobulin kappa light chain [OS=Homo sapiens]
Prohibitin [OS=Homo sapiens]
Isoform 5 of Tropomyosin alpha-3 chain [OS=Homo sapiens]
Talin-1 [OS=Homo sapiens]
Kelch repeat and BTB domain-containing protein 11 [OS=Homo sapiens]
Cathepsin D [OS=Homo sapiens]
ATP synthase subunit O, mitochondrial [OS=Homo sapiens]
Complement C4-B [OS=Homo sapiens]
T-complex protein 1 subunit alpha [OS=Homo sapiens]
Methylmalonate-semialdehyde dehydrogenase [acylating], mitochondrial [OS=Homo sapiens]
Neuronal growth regulator 1 [OS=Homo sapiens]
Isoform 6 of Calcium/calmodulin-dependent protein kinase type II subunit gamma [OS=Homo sapiens]
Tropomyosin alpha-4 chain [OS=Homo sapiens]
guanine nucleotide-binding protein G(i) subunit alpha-2 [OS=Homo sapiens]

peroxiredoxin-1 [OS=Homo sapiens]
Histone H2B type 3-B [OS=Homo sapiens]
Heterogeneous nuclear ribonucleoprotein K [OS=Homo sapiens]
Fatty acid-binding protein, epidermal [OS=Homo sapiens]
Sodium/calcium exchanger 2 [OS=Homo sapiens]
Microtubule-actin cross-linking factor 1, isoforms 1/2/3/5 [OS=Homo sapiens]
Isoform 6 of Dynamin-1-like protein [OS=Homo sapiens]
T-complex protein 1 subunit zeta [OS=Homo sapiens]
Heat shock protein 105 kDa [OS=Homo sapiens]
NAD(P) transhydrogenase, mitochondrial [OS=Homo sapiens]
Glycerol-3-phosphate dehydrogenase, mitochondrial [OS=Homo sapiens]
Glutamine synthetase [OS=Homo sapiens]
Synaptosomal-associated protein 25 [OS=Homo sapiens]
Limbic system-associated membrane protein [OS=Homo sapiens]
Oxidation resistance protein 1 [OS=Homo sapiens]
Alpha-aminoadipic semialdehyde dehydrogenase [OS=Homo sapiens]
Secernin-1 [OS=Homo sapiens]
Histone H2A type 1-A [OS=Homo sapiens]
Endophilin-A1 [OS=Homo sapiens]
Gamma-synuclein [OS=Homo sapiens]
Dihydrolipoyl dehydrogenase, mitochondrial [OS=Homo sapiens]
Inositol 1,4,5-trisphosphate receptor type 1 [OS=Homo sapiens]
Clathrin heavy chain 2 [OS=Homo sapiens]
Isoform 2 of NAD-dependent protein deacetylase sirtuin-2 [OS=Homo sapiens]
Galectin-1 [OS=Homo sapiens]
Carbonyl reductase [NADPH] 1 [OS=Homo sapiens]
Succinate-semialdehyde dehydrogenase, mitochondrial [OS=Homo sapiens]
Talin-2 [OS=Homo sapiens]
ATP-dependent 6-phosphofructokinase, platelet type [OS=Homo sapiens]
AP-2 complex subunit beta [OS=Homo sapiens]
Alpha-synuclein [OS=Homo sapiens]
Septin-8 [OS=Homo sapiens]
Septin-11 [OS=Homo sapiens]
Cytochrome c oxidase subunit 5A, mitochondrial [OS=Homo sapiens]
Transcriptional activator protein Pur-alpha [OS=Homo sapiens]
Coronin-1A [OS=Homo sapiens]
Septin-5 [OS=Homo sapiens]
N(G),N(G)-dimethylarginine dimethylaminohydrolase 1 [OS=Homo sapiens]
guanine deaminase [OS=Homo sapiens]
Catenin alpha-2 [OS=Homo sapiens]
Beta-enolase [OS=Homo sapiens]

Isoform 2 of Voltage-dependent calcium channel subunit alpha-2/delta-1 [OS=Homo sapiens]
ATP-dependent 6-phosphofructokinase, muscle type [OS=Homo sapiens]
Neural cell adhesion molecule 2 [OS=Homo sapiens]
Elongation factor 2 [OS=Homo sapiens]
Histone H1.5 [OS=Homo sapiens]
Nucleolin [OS=Homo sapiens]
Beta-soluble NSF attachment protein [OS=Homo sapiens]
cytosolic non-specific dipeptidase [OS=Homo sapiens]
T-complex protein 1 subunit eta [OS=Homo sapiens]
Hyaluronan and proteoglycan link protein 1 [OS=Homo sapiens]
Contactin-associated protein 1 [OS=Homo sapiens]
protein-L-isoaspartate(D-aspartate) O-methyltransferase [OS=Homo sapiens]
Tropomodulin-2 [OS=Homo sapiens]
Alpha-actinin-2 [OS=Homo sapiens]
Glutathione S-transferase P [OS=Homo sapiens]
Endoplasmin [OS=Homo sapiens]
Histone H2A.V [OS=Homo sapiens]
POTE ankyrin domain family member F [OS=Homo sapiens]
Cofilin-1 [OS=Homo sapiens]
immunoglobulin heavy constant alpha 1 [OS=Homo sapiens]
Complement C3 [OS=Homo sapiens]
Signal-regulatory protein beta-1 isoform 3 [OS=Homo sapiens]
Opioid-binding protein/cell adhesion molecule [OS=Homo sapiens]
Unconventional myosin-Va [OS=Homo sapiens]
Sarcoplasmic/endoplasmic reticulum calcium ATPase 2 [OS=Homo sapiens]
Myristoylated alanine-rich C-kinase substrate [OS=Homo sapiens]
Dynactin subunit 1 [OS=Homo sapiens]
Transgelin-3 [OS=Homo sapiens]
Isoform 5 of Tropomyosin alpha-1 chain [OS=Homo sapiens]
Calcium-binding mitochondrial carrier protein Aralar1 [OS=Homo sapiens]
Isoform 6 of Protein NDRG2 [OS=Homo sapiens]
Carbonic anhydrase 2 [OS=Homo sapiens]
Heat shock 70 kDa protein 12A [OS=Homo sapiens]
NADH dehydrogenase [ubiquinone] flavoprotein 1, mitochondrial [OS=Homo sapiens]
Calreticulin [OS=Homo sapiens]
Neurosecretory protein VGF [OS=Homo sapiens]
Dynamin-3 [OS=Homo sapiens]
Haptoglobin [OS=Homo sapiens]
Guanine nucleotide-binding protein G(i) subunit alpha-1 [OS=Homo sapiens]
Catenin beta-1 [OS=Homo sapiens]

catalase [OS=Homo sapiens]
dihydropteridine reductase [OS=Homo sapiens]
NADH dehydrogenase [ubiquinone] iron-sulfur protein 2, mitochondrial [OS=Homo sapiens]
serine/threonine-protein phosphatase 2B catalytic subunit beta isoform [OS=Homo sapiens]
POTE ankyrin domain family member J [OS=Homo sapiens]
Protein NDRG2 [OS=Homo sapiens]
Myelin-oligodendrocyte glycoprotein [OS=Homo sapiens]
Prohibitin-2 [OS=Homo sapiens]
Protein disulfide-isomerase A3 [OS=Homo sapiens]
Programmed cell death 6-interacting protein [OS=Homo sapiens]
SRC kinase signaling inhibitor 1 [OS=Homo sapiens]
Dihydropyrimidinase-related protein 5 [OS=Homo sapiens]
annexin A5 [OS=Homo sapiens]
Beta-synuclein [OS=Homo sapiens]
Dynamamin-like 120 kDa protein, mitochondrial [OS=Homo sapiens]
Protein disulfide-isomerase [OS=Homo sapiens]
Superoxide dismutase [Mn], mitochondrial [OS=Homo sapiens]
Ras-related protein Rab-3A [OS=Homo sapiens]
dihydropyrimidinase-related protein 4 [OS=Homo sapiens]
Glycogen phosphorylase, muscle form [OS=Homo sapiens]
Histone H3.1 [OS=Homo sapiens]
Isoform 13 of Myelin-oligodendrocyte glycoprotein [OS=Homo sapiens]
L-lactate dehydrogenase A chain [OS=Homo sapiens]
histone H3.2 [OS=Homo sapiens]
Prelamin-A/C [OS=Homo sapiens]
Heat shock protein beta-1 [OS=Homo sapiens]
PHD finger protein 24 [OS=Homo sapiens]
V-type proton ATPase subunit B, kidney isoform [OS=Homo sapiens]
excitatory amino acid transporter 2 [OS=Homo sapiens]
Retinal dehydrogenase 1 [OS=Homo sapiens]
Pyridoxal phosphate phosphatase [OS=Homo sapiens]
60S ribosomal protein L4 [OS=Homo sapiens]
Peroxiredoxin-5, mitochondrial [OS=Homo sapiens]
splicing factor, proline- and glutamine-rich [OS=Homo sapiens]
mitogen-activated protein kinase 1 [OS=Homo sapiens]
Core histone macro-H2A.1 [OS=Homo sapiens]
Putative beta-actin-like protein 3 [OS=Homo sapiens]
Tropomyosin alpha-3 chain [OS=Homo sapiens]
immunoglobulin gamma-1 heavy chain [OS=Homo sapiens]
Moesin [OS=Homo sapiens]

prolow-density lipoprotein receptor-related protein 1 [OS=Homo sapiens]
1-phosphatidylinositol 4,5-bisphosphate phosphodiesterase beta-1 [OS=Homo sapiens]
Isoform 2 of Tropomyosin alpha-4 chain [OS=Homo sapiens]
synaptopodin [OS=Homo sapiens]
Trifunctional enzyme subunit alpha, mitochondrial [OS=Homo sapiens]
Pyruvate dehydrogenase E1 component subunit alpha, somatic form, mitochondrial [OS=Homo sapiens]
Heat shock 70 kDa protein 4 [OS=Homo sapiens]
alpha-2-macroglobulin [OS=Homo sapiens]
Alanine--tRNA ligase, cytoplasmic [OS=Homo sapiens]
Serine/threonine-protein kinase PAK 1 [OS=Homo sapiens]
POTE ankyrin domain family member I [OS=Homo sapiens]
Flotillin-1 [OS=Homo sapiens]
T-complex protein 1 subunit gamma [OS=Homo sapiens]
cullin-associated nedd8-dissociated protein 1 [OS=Homo sapiens]
Matrin-3 [OS=Homo sapiens]
Beta-adducin [OS=Homo sapiens]
Neutral alpha-glucosidase AB [OS=Homo sapiens]
Filamin-C [OS=Homo sapiens]
heterogeneous nuclear ribonucleoprotein r [OS=Homo sapiens]
4-trimethylaminobutyraldehyde dehydrogenase [OS=Homo sapiens]
T-complex protein 1 subunit theta [OS=Homo sapiens]
2-oxoglutarate dehydrogenase, mitochondrial [OS=Homo sapiens]
3-hydroxyacyl-CoA dehydrogenase type-2 [OS=Homo sapiens]
Receptor-type tyrosine-protein phosphatase zeta [OS=Homo sapiens]
Ketimine reductase mu-crystallin [OS=Homo sapiens]
Delta-1-pyrroline-5-carboxylate dehydrogenase, mitochondrial [OS=Homo sapiens]
Isoform 2 of F-actin-capping protein subunit beta [OS=Homo sapiens]
Neuroplastin [OS=Homo sapiens]
4F2 cell-surface antigen heavy chain [OS=Homo sapiens]
Histone H2B type 1-A [OS=Homo sapiens]
ProSAAS [OS=Homo sapiens]
myosin-14 [OS=Homo sapiens]
V-type proton ATPase subunit D [OS=Homo sapiens]
Cell adhesion molecule 4 [OS=Homo sapiens]
Ankyrin-3 [OS=Homo sapiens]
NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 5 [OS=Homo sapiens]
serine/threonine-protein kinase DCLK1 [OS=Homo sapiens]
adenylyl cyclase-associated protein 1 [OS=Homo sapiens]
Ferritin light chain [OS=Homo sapiens]
Copine-6 [OS=Homo sapiens]

Ras-related protein Rab-14 [OS=Homo sapiens]
10 kDa heat shock protein, mitochondrial [OS=Homo sapiens]
Heterogeneous nuclear ribonucleoprotein A1 [OS=Homo sapiens]
NADH dehydrogenase [ubiquinone] iron-sulfur protein 6, mitochondrial [OS=Homo sapiens]
Annexin A2 [OS=Homo sapiens]
4-aminobutyrate aminotransferase, mitochondrial [OS=Homo sapiens]
Fibrinogen beta chain [OS=Homo sapiens]
Vesicle-associated membrane protein 2 [OS=Homo sapiens]
Flotillin-2 [OS=Homo sapiens]
Profilin-2 [OS=Homo sapiens]
cAMP-dependent protein kinase type II-beta regulatory subunit [OS=Homo sapiens]
Isoform 2 of Cytoplasmic dynein 1 intermediate chain 1 [OS=Homo sapiens]
Ubiquitin carboxyl-terminal hydrolase 5 [OS=Homo sapiens]
ATP synthase subunit gamma, mitochondrial [OS=Homo sapiens]
Na(+)/H(+) exchange regulatory cofactor NHE-RF1 [OS=Homo sapiens]
carbonic anhydrase 1 [OS=Homo sapiens]
T-complex protein 1 subunit delta [OS=Homo sapiens]
Voltage-dependent anion-selective channel protein 2 [OS=Homo sapiens]
A-kinase anchor protein 12 [OS=Homo sapiens]
Histone H1.0 [OS=Homo sapiens]
sodium/potassium-transporting ATPase subunit beta-2 [OS=Homo sapiens]
NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 9 [OS=Homo sapiens]
Palmitoyl-protein thioesterase 1 [OS=Homo sapiens]
Neurotrimin [OS=Homo sapiens]
Band 4.1-like protein 1 [OS=Homo sapiens]
Pyruvate dehydrogenase E1 component subunit beta, mitochondrial [OS=Homo sapiens]
V-type proton ATPase subunit H [OS=Homo sapiens]
Isoform 10 of Tropomyosin alpha-1 chain [OS=Homo sapiens]
Isoform IIb of Profilin-2 [OS=Homo sapiens]
epsin-1 [OS=Homo sapiens]
ATP synthase subunit delta, mitochondrial [OS=Homo sapiens]
Unconventional myosin-XVIIa [OS=Homo sapiens]
cytochrome c [OS=Homo sapiens]
Hypoxanthine-guanine phosphoribosyltransferase [OS=Homo sapiens]
Acetyl-CoA acetyltransferase, mitochondrial [OS=Homo sapiens]
Isoform 8 of Tropomyosin alpha-1 chain [OS=Homo sapiens]
laminin subunit beta-2 [OS=Homo sapiens]
Probable phosphoglycerate mutase 4 [OS=Homo sapiens]
Calnexin [OS=Homo sapiens]
Adenylate kinase isoenzyme 1 [OS=Homo sapiens]

T-complex protein 1 subunit epsilon [OS=Homo sapiens]
L-xylulose reductase [OS=Homo sapiens]
Alpha-centractin [OS=Homo sapiens]
Isoform 3 of CLIP-associating protein 2 [OS=Homo sapiens]
cAMP-dependent protein kinase type II-alpha regulatory subunit [OS=Homo sapiens]
phosphoserine aminotransferase [OS=Homo sapiens]
Ribonuclease inhibitor [OS=Homo sapiens]
Protein disulfide-isomerase A6 [OS=Homo sapiens]
Perilipin-3 [OS=Homo sapiens]
Isoform 2 of Adenylyl cyclase-associated protein 1 [OS=Homo sapiens]
phosphoglycerate mutase 2 [OS=Homo sapiens]
AP-2 complex subunit mu [OS=Homo sapiens]
septin-2 [OS=Homo sapiens]
rho GDP-dissociation inhibitor 1 [OS=Homo sapiens]
Dihydrolipoyllysine-residue succinyltransferase component of 2-oxoglutarate dehydrogenase complex, mitochondrial [OS=Homo sapiens]
V-type proton ATPase subunit G 2 [OS=Homo sapiens]
Reticulon-4 [OS=Homo sapiens]
Isoform 3 of Drebrin [OS=Homo sapiens]
Astrocytic phosphoprotein PEA-15 [OS=Homo sapiens]
60S ribosomal protein L6 [OS=Homo sapiens]
Amine oxidase [flavin-containing] B [OS=Homo sapiens]
Ras/Rap GTPase-activating protein SynGAP [OS=Homo sapiens]
NADP-dependent malic enzyme, mitochondrial [OS=Homo sapiens]
Heterogeneous nuclear ribonucleoprotein L [OS=Homo sapiens]
Neuronal pentraxin-1 [OS=Homo sapiens]
Clathrin coat assembly protein AP180 [OS=Homo sapiens]
mitogen-activated protein kinase 3 [OS=Homo sapiens]
Hepatocyte cell adhesion molecule [OS=Homo sapiens]
Isoform 4 of Clathrin coat assembly protein AP180 [OS=Homo sapiens]
Methyl-CpG-binding protein 2 [OS=Homo sapiens]
citrate synthase, mitochondrial [OS=Homo sapiens]
Septin-9 [OS=Homo sapiens]
cytosolic acyl coenzyme A thioester hydrolase [OS=Homo sapiens]
Synapsin-3 [OS=Homo sapiens]
C-terminal-binding protein 1 [OS=Homo sapiens]
Heterogeneous nuclear ribonucleoprotein U [OS=Homo sapiens]
Tripartite motif-containing protein 2 [OS=Homo sapiens]
Elongation factor 1-alpha 2 [OS=Homo sapiens]
Ezrin [OS=Homo sapiens]
Protein S100-B [OS=Homo sapiens]

alpha-1-antitrypsin [OS=Homo sapiens]
Dipeptidyl aminopeptidase-like protein 6 [OS=Homo sapiens]
Heterogeneous nuclear ribonucleoprotein H [OS=Homo sapiens]
Transaldolase [OS=Homo sapiens]
Importin subunit beta-1 [OS=Homo sapiens]
Actin-related protein 2 [OS=Homo sapiens]
Phospholipid-transporting ATPase IA [OS=Homo sapiens]
Rabphilin-3A [OS=Homo sapiens]
Lamin-B1 [OS=Homo sapiens]
Collagen alpha-1(III) chain [OS=Homo sapiens]
Calcium-dependent secretion activator 1 [OS=Homo sapiens]
D-3-phosphoglycerate dehydrogenase [OS=Homo sapiens]
Phosphoglucomutase-1 [OS=Homo sapiens]
cytosol aminopeptidase [OS=Homo sapiens]
Isoform 2 of Septin-5 [OS=Homo sapiens]
V-type proton ATPase subunit C 1 [OS=Homo sapiens]
Neuronal membrane glycoprotein M6-a [OS=Homo sapiens]
ATP synthase subunit d, mitochondrial [OS=Homo sapiens]
Electron transfer flavoprotein subunit alpha, mitochondrial [OS=Homo sapiens]
caM kinase-like vesicle-associated protein [OS=Homo sapiens]
Kinesin-like protein KIF21A [OS=Homo sapiens]
Heterogeneous nuclear ribonucleoprotein A3 [OS=Homo sapiens]
cytochrome b-c1 complex subunit Rieske, mitochondrial [OS=Homo sapiens]
Adipocyte plasma membrane-associated protein [OS=Homo sapiens]
Band 3 anion transport protein [OS=Homo sapiens]
Isoform 2 of Paralemmin-1 [OS=Homo sapiens]
40S ribosomal protein S4, X isoform [OS=Homo sapiens]
60S ribosomal protein L7a [OS=Homo sapiens]
ATP synthase F(0) complex subunit B1, mitochondrial [OS=Homo sapiens]
NADP-dependent malic enzyme [OS=Homo sapiens]
NADH dehydrogenase [ubiquinone] iron-sulfur protein 3, mitochondrial [OS=Homo sapiens]
Isoform 4 of Kinesin-like protein KIF21A [OS=Homo sapiens]
ATP synthase-coupling factor 6, mitochondrial [OS=Homo sapiens]
Cell surface glycoprotein MUC18 [OS=Homo sapiens]
Paralemmin-1 [OS=Homo sapiens]
Peroxiredoxin-6 [OS=Homo sapiens]
High mobility group protein B1 [OS=Homo sapiens]
Histidine triad nucleotide-binding protein 1 [OS=Homo sapiens]
Ras-related protein Ral-A [OS=Homo sapiens]
Thioredoxin-dependent peroxide reductase, mitochondrial [OS=Homo sapiens]

radixin [OS=Homo sapiens]
Gamma-soluble NSF attachment protein [OS=Homo sapiens]
Gephyrin [OS=Homo sapiens]
Heat shock 70 kDa protein 4L [OS=Homo sapiens]
Isoform 7 of Agrin [OS=Homo sapiens]
Apolipoprotein E [OS=Homo sapiens]
S-adenosylhomocysteine hydrolase-like protein 1 [OS=Homo sapiens]
Isoform 2 of Endophilin-B2 [OS=Homo sapiens]
DmX-like protein 2 [OS=Homo sapiens]
Isocitrate dehydrogenase [NADP], mitochondrial [OS=Homo sapiens]
SH3 and multiple ankyrin repeat domains protein 3 [OS=Homo sapiens]
Hsc70-interacting protein [OS=Homo sapiens]
annexin A1 [OS=Homo sapiens]
acyl-CoA-binding protein [OS=Homo sapiens]
peroxisomal multifunctional enzyme type 2 [OS=Homo sapiens]
Disks large homolog 2 [OS=Homo sapiens]
Cell division control protein 42 homolog [OS=Homo sapiens]
Septin-6 [OS=Homo sapiens]
ubiquitin-conjugating enzyme E2 N [OS=Homo sapiens]
immunoglobulin heavy constant mu [OS=Homo sapiens]
Cell cycle exit and neuronal differentiation protein 1 [OS=Homo sapiens]
Isoform 2 of Neuronal-specific septin-3 [OS=Homo sapiens]
Neural cell adhesion molecule L1-like protein [OS=Homo sapiens]
NSFL1 cofactor p47 [OS=Homo sapiens]
Ras-related protein Rab-6B [OS=Homo sapiens]
Myelin-associated glycoprotein [OS=Homo sapiens]
E3 ubiquitin-protein ligase HUWE1 [OS=Homo sapiens]
Heterochromatin protein 1-binding protein 3 [OS=Homo sapiens]
Cytosolic 10-formyltetrahydrofolate dehydrogenase [OS=Homo sapiens]
Atp-dependent rna helicase a [OS=Homo sapiens]
Mitochondrial glutamate carrier 1 [OS=Homo sapiens]
CAP-Gly domain-containing linker protein 2 [OS=Homo sapiens]
kinesin heavy chain isoform 5C [OS=Homo sapiens]
clathrin light chain B [OS=Homo sapiens]
Glyoxylate reductase/hydroxypyruvate reductase [OS=Homo sapiens]
Neuronal-specific septin-3 [OS=Homo sapiens]
Leucine-rich repeat-containing protein 47 [OS=Homo sapiens]
AP-1 complex subunit beta-1 [OS=Homo sapiens]
immunoglobulin lambda constant 2 [OS=Homo sapiens]
Aggrecan core protein [OS=Homo sapiens]
ATP-dependent 6-phosphofructokinase, liver type [OS=Homo sapiens]

Far upstream element-binding protein 2 [OS=Homo sapiens]
major vault protein [OS=Homo sapiens]
Synaptotagmin-1 [OS=Homo sapiens]
Vinculin [OS=Homo sapiens]
pyruvate carboxylase, mitochondrial [OS=Homo sapiens]
immunoglobulin mu heavy chain [OS=Homo sapiens]
Liprin-alpha-3 [OS=Homo sapiens]
Ras-related protein Rab-2A [OS=Homo sapiens]
Tryptophan--tRNA ligase, cytoplasmic [OS=Homo sapiens]
Neurochondrin [OS=Homo sapiens]
actin-related protein 3 [OS=Homo sapiens]
Laminin subunit gamma-1 [OS=Homo sapiens]
tubulin beta-1 chain [OS=Homo sapiens]
WD repeat-containing protein 1 [OS=Homo sapiens]
2-iminobutanoate/2-iminopropanoate deaminase [OS=Homo sapiens]
Hyaluronan and proteoglycan link protein 4 [OS=Homo sapiens]
2-oxoglutarate dehydrogenase-like, mitochondrial [OS=Homo sapiens]
Hypoxia up-regulated protein 1 [OS=Homo sapiens]
Ectonucleotide pyrophosphatase/phosphodiesterase family member 6 [OS=Homo sapiens]
Contactin-2 [OS=Homo sapiens]
cell adhesion molecule 2 [OS=Homo sapiens]
Polyadenylate-binding protein 1 [OS=Homo sapiens]
Serine/threonine-protein phosphatase 2A 65 kDa regulatory subunit A beta isoform [OS=Homo sapiens]
Disks large homolog 1 [OS=Homo sapiens]
Protein kinase C gamma type [OS=Homo sapiens]
Interleukin enhancer-binding factor 3 [OS=Homo sapiens]
BTB/POZ domain-containing protein KCTD12 [OS=Homo sapiens]
Poly(RC)-binding protein 1 [OS=Homo sapiens]
ankyrin-1 [OS=Homo sapiens]
propionyl-CoA carboxylase beta chain, mitochondrial [OS=Homo sapiens]
Calcineurin subunit B type 1 [OS=Homo sapiens]
Serine/arginine-rich splicing factor 3 [OS=Homo sapiens]
Heterogeneous nuclear ribonucleoprotein Q [OS=Homo sapiens]
Protein NipSnap homolog 1 [OS=Homo sapiens]
Selenium-binding protein 1 [OS=Homo sapiens]
Plexin-A1 [OS=Homo sapiens]
Electrogenic sodium bicarbonate cotransporter 1 [OS=Homo sapiens]
V-type proton ATPase subunit d 1 [OS=Homo sapiens]
Delta-aminolevulinic acid dehydratase [OS=Homo sapiens]
Protein phosphatase 1 regulatory subunit 7 [OS=Homo sapiens]

Non-POU domain-containing octamer-binding protein [OS=Homo sapiens]
Clusterin [OS=Homo sapiens]
Membrane-associated progesterone receptor component 1 [OS=Homo sapiens]
bifunctional purine biosynthesis protein purH [OS=Homo sapiens]
Isoform 2 of Heterogeneous nuclear ribonucleoprotein A3 [OS=Homo sapiens]
Cytochrome b-c1 complex subunit 7 [OS=Homo sapiens]
Sideroflexin-1 [OS=Homo sapiens]
Elongation factor 1-alpha 1 [OS=Homo sapiens]
Glutathione peroxidase 1 [OS=Homo sapiens]
Enoyl-CoA hydratase, mitochondrial [OS=Homo sapiens]
Isoform C of AP-1 complex subunit beta-1 [OS=Homo sapiens]
Guanine nucleotide-binding protein G(Q) subunit alpha [OS=Homo sapiens]
40S ribosomal protein S3a [OS=Homo sapiens]
IgLON family member 5 [OS=Homo sapiens]
Stathmin [OS=Homo sapiens]
Isoform 2B of GTPase KRas [OS=Homo sapiens]
Myelin proteolipid protein [OS=Homo sapiens]
Caskin-1 [OS=Homo sapiens]
SH3-containing GRB2-like protein 3-interacting protein 1 [OS=Homo sapiens]
dynactin subunit 2 [OS=Homo sapiens]
Putative cytochrome b-c1 complex subunit Rieske-like protein 1 [OS=Homo sapiens]
Complement component 1 Q subcomponent-binding protein, mitochondrial [OS=Homo sapiens]
26S proteasome non-ATPase regulatory subunit 2 [OS=Homo sapiens]
40S ribosomal protein S8 [OS=Homo sapiens]
Heterogeneous nuclear ribonucleoprotein M [OS=Homo sapiens]
Tripeptidyl-peptidase 1 [OS=Homo sapiens]
Propionyl-CoA carboxylase alpha chain, mitochondrial [OS=Homo sapiens]
Thy-1 membrane glycoprotein [OS=Homo sapiens]
Cytochrome c1, heme protein, mitochondrial [OS=Homo sapiens]
stress-induced-phosphoprotein 1 [OS=Homo sapiens]
cGMP-dependent 3',5'-cyclic phosphodiesterase [OS=Homo sapiens]
Isoform PTPS-MEA of Receptor-type tyrosine-protein phosphatase S [OS=Homo sapiens]
Ras-related protein Rab-5C [OS=Homo sapiens]
NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 9, mitochondrial [OS=Homo sapiens]
fumarate hydratase, mitochondrial [OS=Homo sapiens]
Fibrinogen gamma chain [OS=Homo sapiens]
N(G),N(G)-dimethylarginine dimethylaminohydrolase 2 [OS=Homo sapiens]
Fatty acid-binding protein, heart [OS=Homo sapiens]
putative tyrosine-protein phosphatase auxilin [OS=Homo sapiens]

Isoform 1 of Cell division control protein 42 homolog [OS=Homo sapiens]
Receptor-type tyrosine-protein phosphatase delta [OS=Homo sapiens]
Ras-related protein Rab-11A [OS=Homo sapiens]
Hepatoma-derived growth factor-related protein 3 [OS=Homo sapiens]
Gamma-adducin [OS=Homo sapiens]
elongation factor 1-gamma [OS=Homo sapiens]
Serine/threonine-protein phosphatase 2A catalytic subunit alpha isoform [OS=Homo sapiens]
staphylococcal nuclease domain-containing protein 1 [OS=Homo sapiens]
coronin-1C [OS=Homo sapiens]
alpha-soluble nsf attachment protein [OS=Homo sapiens]
Synaptic vesicle glycoprotein 2A [OS=Homo sapiens]
Cofilin-2 [OS=Homo sapiens]
Sarcoplasmic/endoplasmic reticulum calcium atpase 3 [OS=Homo sapiens]
Isoform 2 of Ras-related protein Rab-6A [OS=Homo sapiens]
Glutathione reductase, mitochondrial [OS=Homo sapiens]
ATP-citrate synthase [OS=Homo sapiens]
Collagen alpha-2(IV) chain [OS=Homo sapiens]
AP2-associated protein kinase 1 [OS=Homo sapiens]
3-ketoacyl-CoA thiolase, mitochondrial [OS=Homo sapiens]
RNA-binding motif protein, X chromosome [OS=Homo sapiens]
serine/threonine-protein phosphatase 2A catalytic subunit beta isoform [OS=Homo sapiens]
Immunoglobulin heavy constant gamma 3 [OS=Homo sapiens]
Immunoglobulin alpha-2 heavy chain [OS=Homo sapiens]
ribose-phosphate pyrophosphokinase 1 [OS=Homo sapiens]
DNA damage-binding protein 1 [OS=Homo sapiens]
Glycogen synthase kinase-3 alpha [OS=Homo sapiens]
MICOS complex subunit MIC19 [OS=Homo sapiens]
Isoform 2 of Probable ATP-dependent RNA helicase DDX17 [OS=Homo sapiens]
Guanine nucleotide-binding protein subunit beta-4 [OS=Homo sapiens]
Phosphoribosylformylglycinamide synthase [OS=Homo sapiens]
EF-hand domain-containing protein D2 [OS=Homo sapiens]
Glycine--tRNA ligase [OS=Homo sapiens]
Ras-related C3 botulinum toxin substrate 1 [OS=Homo sapiens]
EH domain-containing protein 3 [OS=Homo sapiens]
Cysteine-rich protein 2 [OS=Homo sapiens]
G protein-regulated inducer of neurite outgrowth 1 [OS=Homo sapiens]
Tenascin [OS=Homo sapiens]
Fatty acid-binding protein, brain [OS=Homo sapiens]
Ras-related protein Rab-1A [OS=Homo sapiens]
Microtubule-associated protein RP/EB family member 2 [OS=Homo sapiens]

NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 8 [OS=Homo sapiens]
Huntingtin-interacting protein 1-related protein [OS=Homo sapiens]
Transthyretin [OS=Homo sapiens]
Catenin delta-2 [OS=Homo sapiens]
Dual specificity mitogen-activated protein kinase 1 [OS=Homo sapiens]
Myotubularin-related protein 5 [OS=Homo sapiens]
Ephrin type-A receptor 4 [OS=Homo sapiens]
Ras-related protein Rab-11B [OS=Homo sapiens]
Peptidyl-prolyl cis-trans isomerase FKBP4 [OS=Homo sapiens]
Actin-related protein 2/3 complex subunit 2 [OS=Homo sapiens]
Copine-5 [OS=Homo sapiens]
eukaryotic initiation factor 4A-II [OS=Homo sapiens]
Rho-associated protein kinase 2 [OS=Homo sapiens]
heterogeneous nuclear ribonucleoprotein D0 [OS=Homo sapiens]
Glutaredoxin-1 [OS=Homo sapiens]
MICOS complex subunit mic25 [OS=Homo sapiens]
Methylcrotonoyl-CoA carboxylase beta chain, mitochondrial [OS=Homo sapiens]
wiskott-Aldrich syndrome protein family member 1 [OS=Homo sapiens]
Ras-related protein Rab-6A [OS=Homo sapiens]
Dihydrolipoyllysine-residue acetyltransferase component of pyruvate dehydrogenase complex, mitochondrial [OS=Homo sapiens]
Proteasome subunit alpha type-1 [OS=Homo sapiens]
Acidic leucine-rich nuclear phosphoprotein 32 family member A [OS=Homo sapiens]
Potassium-transporting ATPase alpha chain 1 [OS=Homo sapiens]
PC4 and SFRS1-interacting protein [OS=Homo sapiens]
60S ribosomal protein L5 [OS=Homo sapiens]
Endophilin-A3 [OS=Homo sapiens]
6-phosphogluconate dehydrogenase, decarboxylating [OS=Homo sapiens]
septin-4 [OS=Homo sapiens]
Oligodendrocyte-myelin glycoprotein [OS=Homo sapiens]
Apoptosis-inducing factor 1, mitochondrial [OS=Homo sapiens]
ras-related protein Rab-7a [OS=Homo sapiens]
Microtubule-associated protein RP/EB family member 3 [OS=Homo sapiens]
60S ribosomal protein L8 [OS=Homo sapiens]
NADH dehydrogenase [ubiquinone] flavoprotein 2, mitochondrial [OS=Homo sapiens]
Phospholysine phosphohistidine inorganic pyrophosphate phosphatase [OS=Homo sapiens]
Protein-arginine deiminase type-2 [OS=Homo sapiens]
obg-like ATPase 1 [OS=Homo sapiens]
medium-chain specific acyl-CoA dehydrogenase, mitochondrial [OS=Homo sapiens]
ATP-dependent RNA helicase DDX1 [OS=Homo sapiens]

Protein SOGA3 [OS=Homo sapiens]
Nucleophosmin [OS=Homo sapiens]
26S proteasome regulatory subunit 6B [OS=Homo sapiens]
ES1 protein homolog, mitochondrial [OS=Homo sapiens]
ras-related protein Rab-3C [OS=Homo sapiens]
tRNA-splicing ligase RtcB homolog [OS=Homo sapiens]
Interleukin enhancer-binding factor 2 [OS=Homo sapiens]
Serine/threonine-protein phosphatase 5 [OS=Homo sapiens]
glutathione hydrolase 7 [OS=Homo sapiens]
eukaryotic translation initiation factor 4B [OS=Homo sapiens]
tyrosine-protein phosphatase non-receptor type 11 [OS=Homo sapiens]
aldose reductase [OS=Homo sapiens]
peptidyl-prolyl cis-trans isomerase NIMA-interacting 1 [OS=Homo sapiens]
mitochondrial proton/calcium exchanger protein [OS=Homo sapiens]
AFG3-like protein 2 [OS=Homo sapiens]
IQ motif and SEC7 domain-containing protein 1 [OS=Homo sapiens]
1-phosphatidylinositol 4,5-bisphosphate phosphodiesterase delta-1 [OS=Homo sapiens]
Breast carcinoma-amplified sequence 1 [OS=Homo sapiens]
Plexin-A4 [OS=Homo sapiens]
Tubulin alpha chain-like 3 [OS=Homo sapiens]
Quinone oxidoreductase [OS=Homo sapiens]
Isoform 2 of Breast carcinoma-amplified sequence 1 [OS=Homo sapiens]
Cytochrome c oxidase subunit 4 isoform 1, mitochondrial [OS=Homo sapiens]
Proteasome subunit alpha type-7 [OS=Homo sapiens]
MARCKS-related protein [OS=Homo sapiens]
Core histone macro-H2A.2 [OS=Homo sapiens]
nuclear mitotic apparatus protein 1 [OS=Homo sapiens]
Isoform 2 of Voltage-dependent anion-selective channel protein 3 [OS=Homo sapiens]
Phosphatidylinositol 5-phosphate 4-kinase type-2 beta [OS=Homo sapiens]
Pyridoxine-5'-phosphate oxidase [OS=Homo sapiens]
hepatoma-derived growth factor [OS=Homo sapiens]
V-type proton ATPase subunit F [OS=Homo sapiens]
transformer-2 protein homolog beta [OS=Homo sapiens]
aflatoxin B1 aldehyde reductase member 2 [OS=Homo sapiens]
Isoform Crk-I of Adapter molecule crk [OS=Homo sapiens]
PH and SEC7 domain-containing protein 3 [OS=Homo sapiens]
heat shock protein 75 kDa, mitochondrial [OS=Homo sapiens]
SH3 domain-binding glutamic acid-rich-like protein [OS=Homo sapiens]
Immunoglobulin lambda-like polypeptide 5 [OS=Homo sapiens]
neuronal pentraxin receptor [OS=Homo sapiens]

Cathepsin B [OS=Homo sapiens]
Kinesin-1 heavy chain [OS=Homo sapiens]
Solute carrier family 12 member 2 [OS=Homo sapiens]
Contactin-associated protein-like 2 [OS=Homo sapiens]
Cytochrome c oxidase subunit 5B, mitochondrial [OS=Homo sapiens]
Glycerol-3-phosphate dehydrogenase [NAD(+)], cytoplasmic [OS=Homo sapiens]
profilin-1 [OS=Homo sapiens]
glycogen debranching enzyme [OS=Homo sapiens]
Histone H1x [OS=Homo sapiens]
Mitochondrial 2-oxoglutarate/malate carrier protein [OS=Homo sapiens]
electron transfer flavoprotein subunit beta [OS=Homo sapiens]
Guanine nucleotide-binding protein G(S) subunit alpha isoforms XLas [OS=Homo sapiens]
Nucleosome assembly protein 1-like 4 [OS=Homo sapiens]
Sideroflexin-3 [OS=Homo sapiens]
tubulin-folding cofactor B [OS=Homo sapiens]
Paraspeckle component 1 [OS=Homo sapiens]
Excitatory amino acid transporter 1 [OS=Homo sapiens]
Microtubule-associated protein 4 [OS=Homo sapiens]
Protein phosphatase 1F [OS=Homo sapiens]
Immunoglobulin heavy constant gamma 4 [OS=Homo sapiens]
Neuroblast differentiation-associated protein AHNAK [OS=Homo sapiens]
Leucine-rich PPR motif-containing protein, mitochondrial [OS=Homo sapiens]
Prostaglandin-H2 D-isomerase [OS=Homo sapiens]
Cytochrome b-c1 complex subunit 6, mitochondrial [OS=Homo sapiens]
Calpain-1 catalytic subunit [OS=Homo sapiens]
Cytochrome c oxidase subunit 6B1 [OS=Homo sapiens]
60S acidic ribosomal protein P1 [OS=Homo sapiens]
methylglutaconyl-CoA hydratase, mitochondrial [OS=Homo sapiens]
CD166 antigen [OS=Homo sapiens]
Collagen alpha-1(VI) chain [OS=Homo sapiens]
Protein NDRG1 [OS=Homo sapiens]
Trifunctional enzyme subunit beta, mitochondrial [OS=Homo sapiens]
ADP/ATP translocase 3 [OS=Homo sapiens]
Metallo-beta-lactamase domain-containing protein 2 [OS=Homo sapiens]
40S ribosomal protein S11 [OS=Homo sapiens]
epiplakin [OS=Homo sapiens]
apolipoprotein D [OS=Homo sapiens]
Sorcin [OS=Homo sapiens]
Fibrinogen alpha chain [OS=Homo sapiens]
SH3 domain-binding glutamic acid-rich-like protein 3 [OS=Homo sapiens]

GTPase HRas [OS=Homo sapiens]
60S acidic ribosomal protein P0 [OS=Homo sapiens]
Isoform 2 of Cytoplasmic FMR1-interacting protein 2 [OS=Homo sapiens]
Isoform 4 of Band 4.1-like protein 2 [OS=Homo sapiens]
Isoform 3 of Drebrin-like protein [OS=Homo sapiens]
NAD kinase 2, mitochondrial [OS=Homo sapiens]
rho GTPase-activating protein 1 [OS=Homo sapiens]
Spectrin beta chain, non-erythrocytic 4 [OS=Homo sapiens]
Isoform Beta-II of Protein kinase C beta type [OS=Homo sapiens]
S-formylglutathione hydrolase [OS=Homo sapiens]
Cadherin-2 [OS=Homo sapiens]
endonuclease domain-containing 1 protein [OS=Homo sapiens]
Guanine nucleotide-binding protein G(k) subunit alpha [OS=Homo sapiens]
Protein phosphatase 1H [OS=Homo sapiens]
Target of Myb protein 1 [OS=Homo sapiens]
UTP--glucose-1-phosphate uridylyltransferase [OS=Homo sapiens]
Drebrin-like protein [OS=Homo sapiens]
RNA-binding protein Nova-1 [OS=Homo sapiens]
Pyruvate dehydrogenase protein X component, mitochondrial [OS=Homo sapiens]
Haptoglobin-related protein [OS=Homo sapiens]
cadherin-13 [OS=Homo sapiens]
Myosin-11 [OS=Homo sapiens]
Adenosylhomocysteinase 3 [OS=Homo sapiens]
Alpha-1-syntrophin [OS=Homo sapiens]
ADP-ribosylation factor 1 [OS=Homo sapiens]
2,4-dienoyl-CoA reductase, mitochondrial [OS=Homo sapiens]
cytoplasmic dynein 1 intermediate chain 2 [OS=Homo sapiens]
NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 2 [OS=Homo sapiens]
Pyridoxal kinase [OS=Homo sapiens]
60S ribosomal protein L7 [OS=Homo sapiens]
Visinin-like protein 1 [OS=Homo sapiens]
Myosin light polypeptide 6 [OS=Homo sapiens]
60S ribosomal protein L12 [OS=Homo sapiens]
Sodium-driven chloride bicarbonate exchanger [OS=Homo sapiens]
homer protein homolog 3 [OS=Homo sapiens]
glutathione synthetase [OS=Homo sapiens]
Delta(3,5)-Delta(2,4)-dienoyl-CoA isomerase, mitochondrial [OS=Homo sapiens]
Syntaxin-7 [OS=Homo sapiens]
Carboxypeptidase E [OS=Homo sapiens]
Synaptic vesicle membrane protein VAT-1 homolog [OS=Homo sapiens]

Leukocyte surface antigen CD47 [OS=Homo sapiens]
Brain-specific angiogenesis inhibitor 1-associated protein 2 [OS=Homo sapiens]
Neurogranin [OS=Homo sapiens]
protein FAM49B [OS=Homo sapiens]
NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 10 [OS=Homo sapiens]
Calcyphosin [OS=Homo sapiens]
Acylamino-acid-releasing enzyme [OS=Homo sapiens]
UDP-glucose:glycoprotein glucosyltransferase 1 [OS=Homo sapiens]
Nck-associated protein 1 [OS=Homo sapiens]
Myelin P2 protein [OS=Homo sapiens]
Mitochondrial import receptor subunit TOM70 [OS=Homo sapiens]
phosphatidylinositol 5-phosphate 4-kinase type-2 alpha [OS=Homo sapiens]
Tubulointerstitial nephritis antigen-like [OS=Homo sapiens]
Transcriptional activator protein Pur-beta [OS=Homo sapiens]
Dual specificity mitogen-activated protein kinase kinase 2 [OS=Homo sapiens]
Isoform 3 of CaM kinase-like vesicle-associated protein [OS=Homo sapiens]
dipeptidyl peptidase 3 [OS=Homo sapiens]
Endophilin-A2 [OS=Homo sapiens]
Cell cycle and apoptosis regulator protein 2 [OS=Homo sapiens]
NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 7 [OS=Homo sapiens]
CB1 cannabinoid receptor-interacting protein 1 [OS=Homo sapiens]
s-phase kinase-associated protein 1 [OS=Homo sapiens]
complexin-2 [OS=Homo sapiens]
N-terminal EF-hand calcium-binding protein 2 [OS=Homo sapiens]
isoaspartyl peptidase/L-asparaginase [OS=Homo sapiens]
ras-related protein Rab-1B [OS=Homo sapiens]
ATPase inhibitor, mitochondrial [OS=Homo sapiens]
Serine/threonine-protein kinase PAK 3 [OS=Homo sapiens]
ras-related protein rab-10 [OS=Homo sapiens]
Isocitrate dehydrogenase [NAD] subunit alpha, mitochondrial [OS=Homo sapiens]
Collagen alpha-1(IV) chain [OS=Homo sapiens]
COP9 signalosome complex subunit 4 [OS=Homo sapiens]
F-box only protein 2 [OS=Homo sapiens]
Signal-regulatory protein beta-1 [OS=Homo sapiens]
ADP/ATP translocase 2 [OS=Homo sapiens]
glutamate receptor 2 [OS=Homo sapiens]
Cysteine and glycine-rich protein 1 [OS=Homo sapiens]
Disks large homolog 3 [OS=Homo sapiens]
Adenylyl cyclase-associated protein 2 [OS=Homo sapiens]
spliceosome RNA helicase DDX39B [OS=Homo sapiens]

Isoform 5 of Cell adhesion molecule 1 [OS=Homo sapiens]
ADP/ATP translocase 1 [OS=Homo sapiens]
DNA-(apurinic or apyrimidinic site) lyase [OS=Homo sapiens]
Rap1 GTPase-GDP dissociation stimulator 1 [OS=Homo sapiens]
multifunctional protein ADE2 [OS=Homo sapiens]
flavin reductase (NADPH) [OS=Homo sapiens]
Calpain-2 catalytic subunit [OS=Homo sapiens]
Voltage-dependent calcium channel subunit alpha-2/delta-2 [OS=Homo sapiens]
Collagen alpha-2(VI) chain [OS=Homo sapiens]
Calmodulin-regulated spectrin-associated protein 3 [OS=Homo sapiens]
Poly(rC)-binding protein 2 [OS=Homo sapiens]
GTP:AMP phosphotransferase AK3, mitochondrial [OS=Homo sapiens]
xaa-Pro aminopeptidase 1 [OS=Homo sapiens]
Plexin-B1 [OS=Homo sapiens]
Polyadenylate-binding protein 4 [OS=Homo sapiens]
40S ribosomal protein SA [OS=Homo sapiens]
Tumor protein D52 [OS=Homo sapiens]
Amyloid-like protein 1 [OS=Homo sapiens]
Rho guanine nucleotide exchange factor 2 [OS=Homo sapiens]
Isoform Non-brain of Clathrin light chain A [OS=Homo sapiens]
Nucleoside diphosphate kinase A [OS=Homo sapiens]
Carbonyl reductase [NADPH] 3 [OS=Homo sapiens]
epoxide hydrolase 1 [OS=Homo sapiens]
Vesicle-associated membrane protein 1 [OS=Homo sapiens]
6-phosphogluconolactonase [OS=Homo sapiens]
60S acidic ribosomal protein P2 [OS=Homo sapiens]
phytanoyl-CoA hydroxylase-interacting protein [OS=Homo sapiens]
Nucleosome assembly protein 1-like 1 [OS=Homo sapiens]
Phenylalanine--tRNA ligase beta subunit [OS=Homo sapiens]
Isoform 5 of Protein piccolo [OS=Homo sapiens]
Epidermal growth factor receptor substrate 15-like 1 [OS=Homo sapiens]
Serine/threonine-protein kinase PAK 2 [OS=Homo sapiens]
leucine-rich repeat LGI family member 3 [OS=Homo sapiens]
proteasome subunit beta type-5 [OS=Homo sapiens]
Heterogeneous nuclear ribonucleoproteins C1/C2 [OS=Homo sapiens]
Isoform 2 of Microtubule-associated protein RP/EB family member 3 [OS=Homo sapiens]
AP-3 complex subunit delta-1 [OS=Homo sapiens]
Tubulin-specific chaperone A [OS=Homo sapiens]
Myotrophin [OS=Homo sapiens]
Glutathione S-transferase omega-1 [OS=Homo sapiens]

Isoform 3a of Neurexin-1 [OS=Homo sapiens]
Bifunctional glutamate/proline--tRNA ligase [OS=Homo sapiens]
Nectin-1 [OS=Homo sapiens]
CD81 antigen [OS=Homo sapiens]
Serine/arginine-rich splicing factor 1 [OS=Homo sapiens]
Ras-related protein Ral-B [OS=Homo sapiens]
Lamina-associated polypeptide 2, isoforms beta/gamma [OS=Homo sapiens]
TOM1-like protein 2 [OS=Homo sapiens]
(E3-independent) E2 ubiquitin-conjugating enzyme [OS=Homo sapiens]
annexin A11 [OS=Homo sapiens]
Ras-related protein Rap-1b [OS=Homo sapiens]
NADH dehydrogenase [ubiquinone] iron-sulfur protein 8, mitochondrial [OS=Homo sapiens]
Glutathione S-transferase Mu 2 [OS=Homo sapiens]
Putative histone H2B type 2-C [OS=Homo sapiens]
Catechol O-methyltransferase [OS=Homo sapiens]
Isoform 1 of Growth arrest-specific protein 7 [OS=Homo sapiens]
Disintegrin and metalloproteinase domain-containing protein 23 [OS=Homo sapiens]
Filamin-B [OS=Homo sapiens]
Acid ceramidase [OS=Homo sapiens]
60S ribosomal protein L13 [OS=Homo sapiens]
Acetyl-CoA acetyltransferase, cytosolic [OS=Homo sapiens]
ELAV-like protein 1 [OS=Homo sapiens]
Stomatin-like protein 2, mitochondrial [OS=Homo sapiens]
nucleoside diphosphate kinase b [OS=Homo sapiens]
F-actin-capping protein subunit alpha-2 [OS=Homo sapiens]
Proline-rich transmembrane protein 3 [OS=Homo sapiens]
NAD(P)H-hydrate epimerase [OS=Homo sapiens]
Non-histone chromosomal protein HMG-17 [OS=Homo sapiens]
Single-stranded DNA-binding protein, mitochondrial [OS=Homo sapiens]
aquaporin-1 [OS=Homo sapiens]
40S ribosomal protein S3 [OS=Homo sapiens]
Signal-regulatory protein gamma [OS=Homo sapiens]
Glucose-6-phosphate 1-dehydrogenase [OS=Homo sapiens]
Ubiquitin carboxyl-terminal hydrolase 14 [OS=Homo sapiens]
40S ribosomal protein S5 [OS=Homo sapiens]
DnaJ homolog subfamily B member 2 [OS=Homo sapiens]
Hsp90 co-chaperone Cdc37 [OS=Homo sapiens]
NEDD8 [OS=Homo sapiens]
3-mercaptopyruvate sulfurtransferase [OS=Homo sapiens]
Ceruloplasmin [OS=Homo sapiens]

Disintegrin and metalloproteinase domain-containing protein 22 [OS=Homo sapiens]
X-ray repair cross-complementing protein 6 [OS=Homo sapiens]
Isoform 2 of Protocadherin-1 [OS=Homo sapiens]
Immunoglobulin superfamily member 21 [OS=Homo sapiens]
Valine--tRNA ligase [OS=Homo sapiens]
Cysteine desulfurase, mitochondrial [OS=Homo sapiens]
Vesicle-associated membrane protein-associated protein B/C [OS=Homo sapiens]
Ras-related protein Rab-5A [OS=Homo sapiens]
Sodium/calcium exchanger 1 [OS=Homo sapiens]
Neutral cholesterol ester hydrolase 1 [OS=Homo sapiens]
60S ribosomal protein L28 [OS=Homo sapiens]
NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 10, mitochondrial [OS=Homo sapiens]
Omega-amidase NIT2 [OS=Homo sapiens]
Ras-related C3 botulinum toxin substrate 3 [OS=Homo sapiens]
Mycophenolic acid acyl-glucuronide esterase, mitochondrial [OS=Homo sapiens]
Phospholipid transfer protein C2CD2L [OS=Homo sapiens]
Junctional adhesion molecule C [OS=Homo sapiens]
GTP-binding nuclear protein RAN [OS=Homo sapiens]
Serine/threonine-protein phosphatase 2A 55 kDa regulatory subunit B alpha isoform [OS=Homo sapiens]
Metabotropic glutamate receptor 2 [OS=Homo sapiens]
Guanine nucleotide-binding protein subunit beta-5 [OS=Homo sapiens]
Destrin [OS=Homo sapiens]
Reticulocalbin-2 [OS=Homo sapiens]
glia maturation factor beta [OS=Homo sapiens]
Galectin-3-binding protein [OS=Homo sapiens]
Arf-GAP with GTPase, ANK repeat and PH domain-containing protein 3 [OS=Homo sapiens]
alcohol dehydrogenase [NADP(+)] [OS=Homo sapiens]
Proline-rich transmembrane protein 2 [OS=Homo sapiens]
Methionine adenosyltransferase 2 subunit beta [OS=Homo sapiens]
isocitrate dehydrogenase [NAD] subunit beta, mitochondrial [OS=Homo sapiens]
Ubiquitin-conjugating enzyme E2 L3 [OS=Homo sapiens]
40S ribosomal protein S14 [OS=Homo sapiens]
Isoform 2 of Glyoxalase domain-containing protein 4 [OS=Homo sapiens]
Copine-1 [OS=Homo sapiens]
Transcription elongation factor A protein-like 5 [OS=Homo sapiens]
Enolase-phosphatase E1 [OS=Homo sapiens]
Calbindin [OS=Homo sapiens]
Far upstream element-binding protein 1 [OS=Homo sapiens]
Ras-related protein Rab-5B [OS=Homo sapiens]

fructose-bisphosphate aldolase B [OS=Homo sapiens]
neogenin [OS=Homo sapiens]
Extended synaptotagmin-1 [OS=Homo sapiens]
Cytochrome c oxidase subunit 2 [OS=Homo sapiens]
Basigin [OS=Homo sapiens]
Immunoglobulin heavy constant gamma 2 [OS=Homo sapiens]
Hemopexin [OS=Homo sapiens]
Serine--tRNA ligase, cytoplasmic [OS=Homo sapiens]
Calpain small subunit 1 [OS=Homo sapiens]
Thymosin beta-4 [OS=Homo sapiens]
Endoplasmic reticulum resident protein 44 [OS=Homo sapiens]
ATP-dependent (S)-NAD(P)H-hydrate dehydratase [OS=Homo sapiens]
Inositol monophosphatase 1 [OS=Homo sapiens]
Solute carrier family 12 member 5 [OS=Homo sapiens]
Very long-chain specific acyl-CoA dehydrogenase, mitochondrial [OS=Homo sapiens]
Immunity-related GTPase family Q protein [OS=Homo sapiens]
Glutamate receptor ionotropic, delta-2 [OS=Homo sapiens]
Growth factor receptor-bound protein 2 [OS=Homo sapiens]
TAR DNA-binding protein 43 [OS=Homo sapiens]
High mobility group protein B2 [OS=Homo sapiens]
protein NDRG3 [OS=Homo sapiens]
WD repeat-containing protein 7 [OS=Homo sapiens]
Cystathionine beta-synthase [OS=Homo sapiens]
40S ribosomal protein S7 [OS=Homo sapiens]
Apolipoprotein A-I [OS=Homo sapiens]
Neurexin-3 [OS=Homo sapiens]
Inorganic pyrophosphatase [OS=Homo sapiens]
Synaptotagmin-2 [OS=Homo sapiens]
guanine nucleotide-binding protein subunit alpha-11 [OS=Homo sapiens]
Calcium-binding mitochondrial carrier protein Aralar2 [OS=Homo sapiens]
Protein phosphatase 1A [OS=Homo sapiens]
Secretogranin-2 [OS=Homo sapiens]
Prosaposin [OS=Homo sapiens]
40S ribosomal protein S23 [OS=Homo sapiens]
Cystatin-B [OS=Homo sapiens]
IQ motif and SEC7 domain-containing protein 2 [OS=Homo sapiens]
Isoform 2 of Misshapen-like kinase 1 [OS=Homo sapiens]
Ras-related protein Rab-2B [OS=Homo sapiens]
Glutamate receptor 3 [OS=Homo sapiens]
Protein SET [OS=Homo sapiens]
MAGUK p55 subfamily member 2 [OS=Homo sapiens]

KH domain-containing, RNA-binding, signal transduction-associated protein 1 [OS=Homo sapiens]
elongation factor Tu, mitochondrial [OS=Homo sapiens]
40S ribosomal protein S19 [OS=Homo sapiens]
Nidogen-2 [OS=Homo sapiens]
CD9 antigen [OS=Homo sapiens]
Isoform 3 of Clathrin light chain A [OS=Homo sapiens]
leukotriene A-4 hydrolase [OS=Homo sapiens]
Carnosine synthase 1 [OS=Homo sapiens]
Ras-related protein Rab-35 [OS=Homo sapiens]
Serine/threonine-protein phosphatase PP1-beta catalytic subunit [OS=Homo sapiens]
Phosphatidylinositol transfer protein alpha isoform [OS=Homo sapiens]
ryanodine receptor 2 [OS=Homo sapiens]
Tripeptidyl-peptidase 2 [OS=Homo sapiens]
Isoform 2 of Adenylate kinase 2, mitochondrial [OS=Homo sapiens]
Semaphorin-4D [OS=Homo sapiens]
60S ribosomal protein L11 [OS=Homo sapiens]
Proteasome subunit alpha type-2 [OS=Homo sapiens]
Ras-related protein Rab-8B [OS=Homo sapiens]
Protein kinase C epsilon type [OS=Homo sapiens]
Isoform 2 of LisH domain and HEAT repeat-containing protein KIAA1468 [OS=Homo sapiens]
Putative transferase CAF17, mitochondrial [OS=Homo sapiens]
Amine oxidase [flavin-containing] A [OS=Homo sapiens]
Alpha-1-antichymotrypsin [OS=Homo sapiens]
Poly(rC)-binding protein 3 [OS=Homo sapiens]
60S ribosomal protein L27a [OS=Homo sapiens]
Plastin-3 [OS=Homo sapiens]
Serine protease HTRA2, mitochondrial [OS=Homo sapiens]
Sepiapterin reductase [OS=Homo sapiens]
UMP-CMP kinase [OS=Homo sapiens]
60S ribosomal protein L3 [OS=Homo sapiens]
Protein tweety homolog 1 [OS=Homo sapiens]
NADH dehydrogenase [ubiquinone] iron-sulfur protein 5 [OS=Homo sapiens]
Beta-centractin [OS=Homo sapiens]
3-hydroxyisobutyrate dehydrogenase, mitochondrial [OS=Homo sapiens]
2'-deoxynucleoside 5'-phosphate N-hydrolase 1 [OS=Homo sapiens]
Ribosyldihydronicotinamide dehydrogenase [quinone] [OS=Homo sapiens]
60S ribosomal protein L19 [OS=Homo sapiens]
Extracellular superoxide dismutase [Cu-Zn] [OS=Homo sapiens]
THO complex subunit 4 [OS=Homo sapiens]
MTSS1-like protein [OS=Homo sapiens]

MAP kinase-activating death domain protein [OS=Homo sapiens]
Isoform 4 of Peripheral plasma membrane protein CASK [OS=Homo sapiens]
peptidyl-prolyl cis-trans isomerase FKBP3 [OS=Homo sapiens]
Sorbitol dehydrogenase [OS=Homo sapiens]
116 kDa U5 small nuclear ribonucleoprotein component [OS=Homo sapiens]
AP-3 complex subunit beta-2 [OS=Homo sapiens]
Ras-related protein Rab-8A [OS=Homo sapiens]
heterogeneous nuclear ribonucleoprotein U-like protein 2 [OS=Homo sapiens]
sorting and assembly machinery component 50 homolog [OS=Homo sapiens]
Myosin regulatory light chain 12B [OS=Homo sapiens]
Transcription elongation factor A protein-like 6 [OS=Homo sapiens]
Tubulin polymerization-promoting protein family member 3 [OS=Homo sapiens]
Dematin [OS=Homo sapiens]
glycerol-3-phosphate phosphatase [OS=Homo sapiens]
Isoform 2 of Collagen alpha-1(XVIII) chain [OS=Homo sapiens]
Actin-related protein 2/3 complex subunit 4 [OS=Homo sapiens]
Ubiquitin thioesterase otub1 [OS=Homo sapiens]
Leucine-rich repeat and immunoglobulin-like domain-containing nogo receptor-interacting protein 1 [OS=Homo sapiens]
ELAV-like protein 3 [OS=Homo sapiens]
CD44 antigen [OS=Homo sapiens]
Microtubule-associated protein 1S [OS=Homo sapiens]
Isoform 1 of Serine/threonine-protein phosphatase 2A activator [OS=Homo sapiens]
Reticulon-1 [OS=Homo sapiens]
Eukaryotic translation initiation factor 4H [OS=Homo sapiens]
Dynein light chain 2, cytoplasmic [OS=Homo sapiens]
Coronin-1B [OS=Homo sapiens]
LIM and SH3 domain protein 1 [OS=Homo sapiens]
NADH-cytochrome b5 reductase 3 [OS=Homo sapiens]
actin-related protein 2/3 complex subunit 5-like protein [OS=Homo sapiens]
Adenosylhomocysteinase [OS=Homo sapiens]
Peripherin [OS=Homo sapiens]
dual specificity protein phosphatase 3 [OS=Homo sapiens]
Protein RUFY3 [OS=Homo sapiens]
Sulfite oxidase, mitochondrial [OS=Homo sapiens]
Splicing factor 3B subunit 3 [OS=Homo sapiens]
gamma-aminobutyric acid type B receptor subunit 1 [OS=Homo sapiens]
Actin-related protein 2/3 complex subunit 1A [OS=Homo sapiens]
UPF0568 protein C14orf166 [OS=Homo sapiens]
Regulating synaptic membrane exocytosis protein 1 [OS=Homo sapiens]
Actin-binding LIM protein 1 [OS=Homo sapiens]

Cytoskeleton-associated protein 4 [OS=Homo sapiens]
Cytoplasmic dynein 1 light intermediate chain 2 [OS=Homo sapiens]
60S ribosomal protein L18 [OS=Homo sapiens]
glutathione S-transferase Mu 3 [OS=Homo sapiens]
Atlastin-1 [OS=Homo sapiens]
Hydroxyacyl-coenzyme A dehydrogenase, mitochondrial [OS=Homo sapiens]
spectrin alpha chain, erythrocytic 1 [OS=Homo sapiens]
Cytoplasmic aconitate hydratase [OS=Homo sapiens]
NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 13 [OS=Homo sapiens]
ganglioside-induced differentiation-associated protein 1 [OS=Homo sapiens]
Cdc42 effector protein 4 [OS=Homo sapiens]
Heterogeneous nuclear ribonucleoprotein D-like [OS=Homo sapiens]
phosphatidylinositol 4-kinase alpha [OS=Homo sapiens]
ELAV-like protein 4 [OS=Homo sapiens]
cold shock domain-containing protein E1 [OS=Homo sapiens]
Copine-3 [OS=Homo sapiens]
Adenine phosphoribosyltransferase [OS=Homo sapiens]
lactoylglutathione lyase [OS=Homo sapiens]
Actin-binding LIM protein 2 [OS=Homo sapiens]
Glutaminase kidney isoform, mitochondrial [OS=Homo sapiens]
neutral amino acid transporter A [OS=Homo sapiens]
serine/arginine-rich splicing factor 7 [OS=Homo sapiens]
D-dopachrome decarboxylase [OS=Homo sapiens]
DnaJ homolog subfamily A member 2 [OS=Homo sapiens]
Transgelin-2 [OS=Homo sapiens]
Eukaryotic initiation factor 4A-III [OS=Homo sapiens]
phosphatidate cytidyltransferase 2 [OS=Homo sapiens]
Poly [ADP-ribose] polymerase 1 [OS=Homo sapiens]
septin-10 [OS=Homo sapiens]
Activated RNA polymerase II transcriptional coactivator p15 [OS=Homo sapiens]
Cleavage and polyadenylation specificity factor subunit 5 [OS=Homo sapiens]
Triokinase/FMN cyclase [OS=Homo sapiens]
Phosphate carrier protein, mitochondrial [OS=Homo sapiens]
Cyclin-dependent kinase inhibitor 1B [OS=Homo sapiens]
nicotinate-nucleotide pyrophosphorylase [carboxylating] [OS=Homo sapiens]
Ubiquitin-conjugating enzyme E2 variant 2 [OS=Homo sapiens]
cartilage acidic protein 1 [OS=Homo sapiens]
Creatine kinase M-type [OS=Homo sapiens]
Ras-related protein Rab-4B [OS=Homo sapiens]
High mobility group protein HMG-I/HMG-Y [OS=Homo sapiens]

serine/threonine-protein phosphatase PP1-gamma catalytic subunit [OS=Homo sapiens]
NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 6 [OS=Homo sapiens]
40S ribosomal protein S18 [OS=Homo sapiens]
Nucleoprotein TPR [OS=Homo sapiens]
Small glutamine-rich tetratricopeptide repeat-containing protein alpha [OS=Homo sapiens]
heterogeneous nuclear ribonucleoprotein H2 [OS=Homo sapiens]
Tripartite motif-containing protein 3 [OS=Homo sapiens]
IanC-like protein 2 [OS=Homo sapiens]
UV excision repair protein RAD23 homolog B [OS=Homo sapiens]
glucose 1,6-bisphosphate synthase [OS=Homo sapiens]
Heterogeneous nuclear ribonucleoprotein F [OS=Homo sapiens]
Endoplasmic reticulum resident protein 29 [OS=Homo sapiens]
C-1-tetrahydrofolate synthase, cytoplasmic [OS=Homo sapiens]
Syntaxin-12 [OS=Homo sapiens]
abl interactor 2 [OS=Homo sapiens]
Telomeric repeat-binding factor 2-interacting protein 1 [OS=Homo sapiens]
NCK-interacting protein with SH3 domain [OS=Homo sapiens]
serine/threonine-protein phosphatase PP1-alpha catalytic subunit [OS=Homo sapiens]
Pterin-4-alpha-carbinolamine dehydratase [OS=Homo sapiens]
RNA-binding protein FUS [OS=Homo sapiens]
xaa-Pro dipeptidase [OS=Homo sapiens]
Alpha-1-acid glycoprotein 1 [OS=Homo sapiens]
Centrosomal protein of 170 kDa protein B [OS=Homo sapiens]
Leukocyte elastase inhibitor [OS=Homo sapiens]
Twinfilin-2 [OS=Homo sapiens]
proliferation-associated protein 2G4 [OS=Homo sapiens]
Splicing factor U2AF 65 kDa subunit [OS=Homo sapiens]
60S ribosomal protein L35 [OS=Homo sapiens]
transcription elongation factor A protein-like 3 [OS=Homo sapiens]
Tight junction protein ZO-1 [OS=Homo sapiens]
haloacid dehalogenase-like hydrolase domain-containing protein 2 [OS=Homo sapiens]
Toll-interacting protein [OS=Homo sapiens]
Protein lin-7 homolog C [OS=Homo sapiens]
Annexin A7 [OS=Homo sapiens]
Phosphoribosyl pyrophosphate synthase-associated protein 1 [OS=Homo sapiens]
Kinesin-like protein KIF2A [OS=Homo sapiens]
Transmembrane protein 163 [OS=Homo sapiens]
Protein disulfide-isomerase A4 [OS=Homo sapiens]

carbonic anhydrase-related protein [OS=Homo sapiens]
Na(+)/H(+) exchange regulatory cofactor NHE-RF2 [OS=Homo sapiens]
dystonin [OS=Homo sapiens]
proline-rich protein 36 [OS=Homo sapiens]
Calcium/calmodulin-dependent 3',5'-cyclic nucleotide phosphodiesterase 1A [OS=Homo sapiens]
60S ribosomal protein L23 [OS=Homo sapiens]
Homer protein homolog 1 [OS=Homo sapiens]
Liprin-alpha-2 [OS=Homo sapiens]
guanine nucleotide-binding protein G(z) subunit alpha [OS=Homo sapiens]
adaptin ear-binding coat-associated protein 1 [OS=Homo sapiens]
Receptor of activated protein C kinase 1 [OS=Homo sapiens]
Protein lin-7 homolog A [OS=Homo sapiens]
Peroxiredoxin-4 [OS=Homo sapiens]
Isoform 2 of Nebulette [OS=Homo sapiens]
SH3 and multiple ankyrin repeat domains protein 1 [OS=Homo sapiens]
Uncharacterized protein KIAA0513 [OS=Homo sapiens]
programmed cell death protein 6 [OS=Homo sapiens]
Peptidyl-prolyl cis-trans isomerase FKBP1A [OS=Homo sapiens]
Translationally-controlled tumor protein [OS=Homo sapiens]
26S proteasome regulatory subunit 6A [OS=Homo sapiens]
Serine/threonine-protein kinase BRSK1 [OS=Homo sapiens]
RNA-binding protein 39 [OS=Homo sapiens]
Galectin-3 [OS=Homo sapiens]
Bifunctional epoxide hydrolase 2 [OS=Homo sapiens]
Acylphosphatase-2 [OS=Homo sapiens]
Eukaryotic translation initiation factor 5A-1 [OS=Homo sapiens]
40S ribosomal protein S9 [OS=Homo sapiens]
Isoform 12 of Sorbin and SH3 domain-containing protein 1 [OS=Homo sapiens]
Ester hydrolase C11orf54 [OS=Homo sapiens]
Haloacid dehalogenase-like hydrolase domain-containing protein 3 [OS=Homo sapiens]
Macrophage-capping protein [OS=Homo sapiens]
Synaptic vesicle membrane protein VAT-1 homolog-like [OS=Homo sapiens]
Dickkopf-related protein 3 [OS=Homo sapiens]
SRA stem-loop-interacting RNA-binding protein, mitochondrial [OS=Homo sapiens]
V-type proton ATPase subunit G 1 [OS=Homo sapiens]
Tyrosine--tRNA ligase, cytoplasmic [OS=Homo sapiens]
Microtubule-associated protein RP/EB family member 1 [OS=Homo sapiens]
Isoform 3 of Serine/threonine-protein kinase DCLK2 [OS=Homo sapiens]
isochorismatase domain-containing protein 2 [OS=Homo sapiens]
Mimecan [OS=Homo sapiens]

Catenin alpha-1 [OS=Homo sapiens]
ARF GTPase-activating protein GIT1 [OS=Homo sapiens]
Cytochrome b5 type B [OS=Homo sapiens]
Src substrate cortactin [OS=Homo sapiens]
cAMP-dependent protein kinase type I-alpha regulatory subunit [OS=Homo sapiens]
guanine nucleotide-binding protein g(i)/g(s)/g(o) subunit gamma-12 [OS=Homo sapiens]
PITH domain-containing protein 1 [OS=Homo sapiens]
prolyl endopeptidase-like [OS=Homo sapiens]
Aminoacylase-1 [OS=Homo sapiens]
Fibrillin-1 [OS=Homo sapiens]
fructosamine-3-kinase [OS=Homo sapiens]
60S ribosomal protein L23a [OS=Homo sapiens]
Disco-interacting protein 2 homolog B [OS=Homo sapiens]
ethanolamine-phosphate cytidyltransferase [OS=Homo sapiens]
Arf-GAP with GTPase, ANK repeat and PH domain-containing protein 1 [OS=Homo sapiens]
26S proteasome non-ATPase regulatory subunit 1 [OS=Homo sapiens]
Uncharacterized protein KIAA1211-like [OS=Homo sapiens]
Casein kinase II subunit alpha [OS=Homo sapiens]
Calretinin [OS=Homo sapiens]
Dynactin subunit 4 [OS=Homo sapiens]
saccharopine dehydrogenase-like oxidoreductase [OS=Homo sapiens]
peptidyl-prolyl cis-trans isomerase B [OS=Homo sapiens]
Crk-like protein [OS=Homo sapiens]
Lethal(2) giant larvae protein homolog 1 [OS=Homo sapiens]
ATP synthase subunit epsilon, mitochondrial [OS=Homo sapiens]
COP9 signalosome complex subunit 7a [OS=Homo sapiens]
Ras GTPase-activating-like protein IQGAP1 [OS=Homo sapiens]
RuvB-like 1 [OS=Homo sapiens]
Aquaporin-4 [OS=Homo sapiens]
NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 4 [OS=Homo sapiens]
Heterogeneous nuclear ribonucleoprotein H3 [OS=Homo sapiens]
Casein kinase II subunit beta [OS=Homo sapiens]
Vacuolar protein sorting-associated protein 51 homolog [OS=Homo sapiens]
lysosomal alpha-glucosidase [OS=Homo sapiens]
Kinesin heavy chain isoform 5A [OS=Homo sapiens]
ELAV-like protein 2 [OS=Homo sapiens]
Glypican-1 [OS=Homo sapiens]
Parvalbumin alpha [OS=Homo sapiens]
Integrin alpha-V [OS=Homo sapiens]
Succinate--CoA ligase [ADP/GDP-forming] subunit alpha, mitochondrial [OS=Homo sapiens]

sapiens]
active breakpoint cluster region-related protein [OS=Homo sapiens]
Dipeptidyl peptidase 2 [OS=Homo sapiens]
calcium-dependent secretion activator 2 [OS=Homo sapiens]
Transcription factor A, mitochondrial [OS=Homo sapiens]
Eukaryotic translation initiation factor 3 subunit I [OS=Homo sapiens]
Tumor protein D54 [OS=Homo sapiens]
Calcineurin B homologous protein 1 [OS=Homo sapiens]
Vacuolar protein sorting-associated protein 13a [OS=Homo sapiens]
proteasome subunit beta type-2 [OS=Homo sapiens]
Splicing factor 3b subunit 2 [OS=Homo sapiens]
regulator complex protein LAMTOR4 [OS=Homo sapiens]
Adhesion G protein-coupled receptor L3 [OS=Homo sapiens]
erythrocyte band 7 integral membrane protein [OS=Homo sapiens]
MAP6 domain-containing protein 1 [OS=Homo sapiens]
26S proteasome regulatory subunit 7 [OS=Homo sapiens]
Very-long-chain (3R)-3-hydroxyacyl-CoA dehydratase 3 [OS=Homo sapiens]
Beta-arrestin-1 [OS=Homo sapiens]
Cytoplasmic dynein 1 light intermediate chain 1 [OS=Homo sapiens]
vitamin D-binding protein [OS=Homo sapiens]
Vesicular glutamate transporter 1 [OS=Homo sapiens]
Isoform 3 of CLIP-associating protein 1 [OS=Homo sapiens]
Neuroigin-2 [OS=Homo sapiens]
40S RIBOSOMAL PROTEIN S6 [OS=Homo sapiens]
Elongation factor 1-delta [OS=Homo sapiens]
Small nuclear ribonucleoprotein Sm D1 [OS=Homo sapiens]
Mitochondrial carrier homolog 2 [OS=Homo sapiens]
Secretory carrier-associated membrane protein 3 [OS=Homo sapiens]
Probable G-protein coupled receptor 158 [OS=Homo sapiens]
alcohol dehydrogenase class-3 [OS=Homo sapiens]
Heme-binding protein 2 [OS=Homo sapiens]
Cleavage and polyadenylation specificity factor subunit 6 [OS=Homo sapiens]
FXVD domain-containing ion transport regulator 6 [OS=Homo sapiens]
AP-3 complex subunit mu-2 [OS=Homo sapiens]
Phenylalanine--tRNA ligase alpha subunit [OS=Homo sapiens]
Laminin subunit alpha-5 [OS=Homo sapiens]
NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 5, mitochondrial [OS=Homo sapiens]
Dynein light chain 1, cytoplasmic [OS=Homo sapiens]
guanylate kinase [OS=Homo sapiens]
Ganglioside GM2 activator [OS=Homo sapiens]

Seizure 6-like protein 2 [OS=Homo sapiens]
Deoxyuridine 5'-triphosphate nucleotidohydrolase, mitochondrial [OS=Homo sapiens]
Type I inositol 3,4-bisphosphate 4-phosphatase [OS=Homo sapiens]
Transforming protein RhoA [OS=Homo sapiens]
Rho-related GTP-binding protein RhoG [OS=Homo sapiens]
Isocitrate dehydrogenase [NADP] cytoplasmic [OS=Homo sapiens]
Isoform 2 of Pleckstrin homology domain-containing family B member 1 [OS=Homo sapiens]
Fatty acid-binding protein, liver [OS=Homo sapiens]
Amyloid-beta A4 protein [OS=Homo sapiens]
Myosin light chain 6B [OS=Homo sapiens]
Low molecular weight phosphotyrosine protein phosphatase [OS=Homo sapiens]
thymosin beta-10 [OS=Homo sapiens]
Isoform 1 of Collagen alpha-1(II) chain [OS=Homo sapiens]
adenylosuccinate synthetase isozyme 2 [OS=Homo sapiens]
Alpha-1B-glycoprotein [OS=Homo sapiens]
Neurabin-2 [OS=Homo sapiens]
60S ribosomal protein L15 [OS=Homo sapiens]
40S ribosomal protein S10 [OS=Homo sapiens]
uridine diphosphate glucose pyrophosphatase [OS=Homo sapiens]
cytoplasmic FMR1-interacting protein 1 [OS=Homo sapiens]
selenocysteine lyase [OS=Homo sapiens]
Creatine kinase S-type, mitochondrial [OS=Homo sapiens]
MAP7 domain-containing protein 1 [OS=Homo sapiens]
SEC14-like protein 2 [OS=Homo sapiens]
Vacuolar protein sorting-associated protein 35 [OS=Homo sapiens]
guanine nucleotide-binding protein G(I)/G(S)/G(O) subunit gamma-7 [OS=Homo sapiens]
Reticulophagy regulator 2 [OS=Homo sapiens]
Mitochondrial import inner membrane translocase subunit Tim9 [OS=Homo sapiens]
Cysteine--tRNA ligase, cytoplasmic [OS=Homo sapiens]
Glycogen synthase kinase-3 beta [OS=Homo sapiens]
Actin-related protein 3B [OS=Homo sapiens]
Kinesin light chain 1 [OS=Homo sapiens]
NAD-dependent malic enzyme, mitochondrial [OS=Homo sapiens]
Phosphoribosyl pyrophosphate synthase-associated protein 2 [OS=Homo sapiens]
Thioredoxin reductase 1, cytoplasmic [OS=Homo sapiens]
Peptidyl-glycine alpha-amidating monooxygenase [OS=Homo sapiens]
protein O-GlcNAcase [OS=Homo sapiens]
Neuropathy target esterase [OS=Homo sapiens]
biglycan [OS=Homo sapiens]
Serum amyloid A-1 protein [OS=Homo sapiens]

Protein kinase C alpha type [OS=Homo sapiens]
Angiotensinogen [OS=Homo sapiens]
Dolichyl-diphosphooligosaccharide--protein glycosyltransferase subunit 1 [OS=Homo sapiens]
SH3 and multiple ankyrin repeat domains protein 2 [OS=Homo sapiens]
prolyl endopeptidase [OS=Homo sapiens]
ER membrane protein complex subunit 1 [OS=Homo sapiens]
Serine/arginine-rich splicing factor 10 [OS=Homo sapiens]
Guanine nucleotide-binding protein G(I)/G(S)/G(O) subunit gamma-2 [OS=Homo sapiens]
coiled-coil domain-containing protein 6 [OS=Homo sapiens]
Protein CDV3 homolog [OS=Homo sapiens]
Isoform 2 of Heterogeneous nuclear ribonucleoprotein A/B [OS=Homo sapiens]
Thioredoxin-like protein 1 [OS=Homo sapiens]
Calcium/calmodulin-dependent 3',5'-cyclic nucleotide phosphodiesterase 1B [OS=Homo sapiens]
U8 snoRNA-decapping enzyme [OS=Homo sapiens]
Phospholipid hydroperoxide glutathione peroxidase, mitochondrial [OS=Homo sapiens]
Carnitine O-acetyltransferase [OS=Homo sapiens]
Neural Wiskott-Aldrich syndrome protein [OS=Homo sapiens]
c-terminal-binding protein 2 [OS=Homo sapiens]
Ubiquitin-conjugating enzyme E2 variant 1 [OS=Homo sapiens]
Sodium- and chloride-dependent GABA transporter 1 [OS=Homo sapiens]
COP9 signalosome complex subunit 8 [OS=Homo sapiens]
Zyxin [OS=Homo sapiens]
Biliverdin reductase A [OS=Homo sapiens]
Asparagine--tRNA ligase, cytoplasmic [OS=Homo sapiens]
Isoform 1 of Nucleolar protein 3 [OS=Homo sapiens]
Beta-2-microglobulin [OS=Homo sapiens]
Sorting nexin-12 [OS=Homo sapiens]
Charged multivesicular body protein 4b [OS=Homo sapiens]
Tropomodulin-1 [OS=Homo sapiens]
Nidogen-1 [OS=Homo sapiens]
Signal recognition particle 14 kDa protein [OS=Homo sapiens]
fumarylacetoacetate hydrolase domain-containing protein 2A [OS=Homo sapiens]
CDGSH iron-sulfur domain-containing protein 1 [OS=Homo sapiens]
Glucosidase 2 subunit beta [OS=Homo sapiens]
Cell cycle control protein 50A [OS=Homo sapiens]
Heme-binding protein 1 [OS=Homo sapiens]
DnaJ homolog subfamily A member 1 [OS=Homo sapiens]
Protein phosphatase 1 regulatory subunit 1B [OS=Homo sapiens]

Coronin-2B [OS=Homo sapiens]
Isoform 6 of Protein NDRG4 [OS=Homo sapiens]
mitochondrial fission 1 protein [OS=Homo sapiens]
RasGAP-activating-like protein 1 [OS=Homo sapiens]
Isoform 2 of Epimerase family protein SDR39U1 [OS=Homo sapiens]
Guanine nucleotide-binding protein-like 1 [OS=Homo sapiens]
cAMP-dependent protein kinase catalytic subunit alpha [OS=Homo sapiens]
Succinate dehydrogenase [ubiquinone] iron-sulfur subunit, mitochondrial [OS=Homo sapiens]
Kinesin light chain 2 [OS=Homo sapiens]
purine nucleoside phosphorylase [OS=Homo sapiens]
annexin A4 [OS=Homo sapiens]
Complement factor B [OS=Homo sapiens]
60S ribosomal protein L10 [OS=Homo sapiens]
Serine/threonine-protein phosphatase 2A 56 kDa regulatory subunit epsilon isoform [OS=Homo sapiens]
arylsulfatase A [OS=Homo sapiens]
Polypyrimidine tract-binding protein 2 [OS=Homo sapiens]
Nuclear ubiquitous casein and cyclin-dependent kinase substrate 1 [OS=Homo sapiens]
LanC-like protein 1 [OS=Homo sapiens]
Fatty acid-binding protein, adipocyte [OS=Homo sapiens]
Elongin-B [OS=Homo sapiens]
Scaffold attachment factor B1 [OS=Homo sapiens]
Early endosome antigen 1 [OS=Homo sapiens]
Regulator of microtubule dynamics protein 3 [OS=Homo sapiens]
Phosphofurin acidic cluster sorting protein 1 [OS=Homo sapiens]
Cleavage and polyadenylation specificity factor subunit 7 [OS=Homo sapiens]
Vacuolar protein sorting-associated protein 52 homolog [OS=Homo sapiens]
Serine/threonine-protein phosphatase 4 catalytic subunit [OS=Homo sapiens]
Platelet-activating factor acetylhydrolase IB subunit alpha [OS=Homo sapiens]
Inactive dipeptidyl peptidase 10 [OS=Homo sapiens]
Plexin-C1 [OS=Homo sapiens]
40S ribosomal protein S2 [OS=Homo sapiens]
Tight junction protein ZO-2 [OS=Homo sapiens]
Elongation factor 1-beta [OS=Homo sapiens]
Heterogeneous nuclear ribonucleoprotein A0 [OS=Homo sapiens]
Microtubule-associated proteins 1A/1B light chain 3B [OS=Homo sapiens]
Optineurin [OS=Homo sapiens]
40S ribosomal protein S16 [OS=Homo sapiens]
Regulator of nonsense transcripts 1 [OS=Homo sapiens]
PI-PLC X domain-containing protein 3 [OS=Homo sapiens]
Proteasome subunit alpha type-5 [OS=Homo sapiens]

Tetraspanin-7 [OS=Homo sapiens]
Wolframin [OS=Homo sapiens]
Serine/arginine-rich splicing factor 6 [OS=Homo sapiens]
Receptor-type tyrosine-protein phosphatase F [OS=Homo sapiens]
Carbonic anhydrase 4 [OS=Homo sapiens]
Basal cell adhesion molecule [OS=Homo sapiens]
Succinate--CoA ligase [ADP-forming] subunit beta, mitochondrial [OS=Homo sapiens]
Sodium channel protein type 2 subunit alpha [OS=Homo sapiens]
platelet-activating factor acetylhydrolase IB subunit beta [OS=Homo sapiens]
V-type proton ATPase subunit d 2 [OS=Homo sapiens]
prolargin [OS=Homo sapiens]
Translin [OS=Homo sapiens]
thioredoxin [OS=Homo sapiens]
Pyruvate dehydrogenase E1 component subunit alpha, testis-specific form, mitochondrial [OS=Homo sapiens]
Syntaxin-binding protein 5 [OS=Homo sapiens]
Pre-B-cell leukemia transcription factor-interacting protein 1 [OS=Homo sapiens]
serpin B6 [OS=Homo sapiens]
Protocadherin-9 [OS=Homo sapiens]
Alcohol dehydrogenase 1B [OS=Homo sapiens]
60S ribosomal protein L17 [OS=Homo sapiens]
FSD1-like protein [OS=Homo sapiens]
Small nuclear ribonucleoprotein Sm D2 [OS=Homo sapiens]
glutathione hydrolase 5 proenzyme [OS=Homo sapiens]
Adenylate kinase isoenzyme 5 [OS=Homo sapiens]
Phosphatidylinositol-binding clathrin assembly protein [OS=Homo sapiens]
Protein SGT1 homolog [OS=Homo sapiens]
Lupus La protein [OS=Homo sapiens]
Enoyl-CoA delta isomerase 1, mitochondrial [OS=Homo sapiens]
Isoform 2 of Rap1 GTPase-activating protein 1 [OS=Homo sapiens]
Liprin-alpha-4 [OS=Homo sapiens]
Glutathione S-transferase theta-1 [OS=Homo sapiens]
proteasome subunit beta type-1 [OS=Homo sapiens]
vesicle-associated membrane protein-associated protein A [OS=Homo sapiens]
Importin-9 [OS=Homo sapiens]
choline transporter-like protein 1 [OS=Homo sapiens]
Probable phospholipid-transporting ATPase IIA [OS=Homo sapiens]
Calsyntenin-1 [OS=Homo sapiens]
Golgi apparatus protein 1 [OS=Homo sapiens]
Complexin-1 [OS=Homo sapiens]
EH domain-containing protein 1 [OS=Homo sapiens]

glycine amidinotransferase, mitochondrial [OS=Homo sapiens]
Serine/threonine-protein phosphatase 2B catalytic subunit gamma isoform [OS=Homo sapiens]
Copine-9 [OS=Homo sapiens]
AMP deaminase 2 [OS=Homo sapiens]
ADP-ribosylation factor 5 [OS=Homo sapiens]
Prefoldin subunit 6 [OS=Homo sapiens]
Tuberin [OS=Homo sapiens]
Lymphocyte antigen 6H [OS=Homo sapiens]
Major prion protein [OS=Homo sapiens]
L-aminoadipate-semialdehyde dehydrogenase-phosphopantetheinyl transferase [OS=Homo sapiens]
Protein rogdi homolog [OS=Homo sapiens]
Phospholipase D3 [OS=Homo sapiens]
General vesicular transport factor p115 [OS=Homo sapiens]
glutamate--cysteine ligase catalytic subunit [OS=Homo sapiens]
Acyl-coenzyme A thioesterase 9, mitochondrial [OS=Homo sapiens]
Laminin subunit alpha-2 [OS=Homo sapiens]
Histidine--tRNA ligase, cytoplasmic [OS=Homo sapiens]
S-adenosylmethionine synthase isoform type-2 [OS=Homo sapiens]
Cerebellin-1 [OS=Homo sapiens]
Keratin, type II cytoskeletal 1 [OS=Homo sapiens]
Synaptic vesicle glycoprotein 2B [OS=Homo sapiens]
Acyl-coenzyme A thioesterase 13 [OS=Homo sapiens]
Plastin-2 [OS=Homo sapiens]
1-phosphatidylinositol 4,5-bisphosphate phosphodiesterase delta-3 [OS=Homo sapiens]
Syntenin-1 [OS=Homo sapiens]
protein stum homolog [OS=Homo sapiens]
NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 7 [OS=Homo sapiens]
HLA class I histocompatibility antigen, A-11 alpha chain [OS=Homo sapiens]
Protein S100-A9 [OS=Homo sapiens]
Isoform HMG-Y of High mobility group protein HMG-I/HMG-Y [OS=Homo sapiens]
Galectin-related protein [OS=Homo sapiens]
RuvB-like 2 [OS=Homo sapiens]
Reticulon-3 [OS=Homo sapiens]
Vacuolar protein sorting-associated protein 26B [OS=Homo sapiens]
Reticulon-4 receptor-like 2 [OS=Homo sapiens]
DNA-dependent protein kinase catalytic subunit [OS=Homo sapiens]
Cullin-3 [OS=Homo sapiens]
Prefoldin subunit 2 [OS=Homo sapiens]
eukaryotic translation initiation factor 2 subunit 3 [OS=Homo sapiens]

Gamma-aminobutyric acid receptor subunit beta-3 [OS=Homo sapiens]
V-type proton ATPase 16 kDa proteolipid subunit [OS=Homo sapiens]
Serine/threonine-protein kinase 24 [OS=Homo sapiens]
40S ribosomal protein S25 [OS=Homo sapiens]
Proteasome subunit alpha type-6 [OS=Homo sapiens]
Peptidyl-prolyl cis-trans isomerase F, mitochondrial [OS=Homo sapiens]
Protein NipSnap homolog 2 [OS=Homo sapiens]
Acylpyruvase FAHD1, mitochondrial [OS=Homo sapiens]
60S ribosomal protein L31 [OS=Homo sapiens]
Aminomethyltransferase, mitochondrial [OS=Homo sapiens]
Magnesium-dependent phosphatase 1 [OS=Homo sapiens]
Protein FAM171A2 [OS=Homo sapiens]
26S proteasome regulatory subunit 8 [OS=Homo sapiens]
Wiskott-Aldrich syndrome protein family member 3 [OS=Homo sapiens]
Proteasome subunit beta type-6 [OS=Homo sapiens]
N-acetyl-D-glucosamine kinase [OS=Homo sapiens]
activator of 90 kDa heat shock protein ATPase homolog 1 [OS=Homo sapiens]
Hemoglobin subunit gamma-1 [OS=Homo sapiens]
Secretogranin-1 [OS=Homo sapiens]
small nuclear ribonucleoprotein sm d3 [OS=Homo sapiens]
Plexin-B2 [OS=Homo sapiens]
Adenylate kinase 4, mitochondrial [OS=Homo sapiens]
Protein kinase C and casein kinase substrate in neurons protein 2 [OS=Homo sapiens]
Putative coiled-coil-helix-coiled-coil-helix domain-containing protein CHCHD2P9, mitochondrial [OS=Homo sapiens]
WD repeat-containing protein 37 [OS=Homo sapiens]
centrosomal protein of 41 kDa [OS=Homo sapiens]
aspartoacylase [OS=Homo sapiens]
structural maintenance of chromosomes protein 1a [OS=Homo sapiens]
3-hydroxybutyrate dehydrogenase type 2 [OS=Homo sapiens]
Large proline-rich protein BAG6 [OS=Homo sapiens]
Arf-GAP with GTPase, ANK repeat and PH domain-containing protein 2 [OS=Homo sapiens]
F-actin-capping protein subunit alpha-1 [OS=Homo sapiens]
glutamate carboxypeptidase 2 [OS=Homo sapiens]
Small VCP/p97-interacting protein [OS=Homo sapiens]
D-beta-hydroxybutyrate dehydrogenase, mitochondrial [OS=Homo sapiens]
Myeloid leukemia factor 2 [OS=Homo sapiens]
Heat shock protein beta-6 [OS=Homo sapiens]
Cerebellin-3 [OS=Homo sapiens]
sequestosome-1 [OS=Homo sapiens]
Cold-inducible RNA-binding protein [OS=Homo sapiens]

Lysosome membrane protein 2 [OS=Homo sapiens]
Isoform 3 of Polypyrimidine tract-binding protein 2 [OS=Homo sapiens]
Neurabin-1 [OS=Homo sapiens]
coactosin-like protein [OS=Homo sapiens]
60S ribosomal protein L13a [OS=Homo sapiens]
Transcription intermediary factor 1-beta [OS=Homo sapiens]
Antithrombin-III [OS=Homo sapiens]
Methyltransferase-like 26 [OS=Homo sapiens]
60S ribosomal protein L29 [OS=Homo sapiens]
ATP-dependent RNA helicase DDX3X [OS=Homo sapiens]
estradiol 17-beta-dehydrogenase 8 [OS=Homo sapiens]
14-3-3 protein sigma [OS=Homo sapiens]
Lumican [OS=Homo sapiens]
HLA class I histocompatibility antigen, A-2 alpha chain [OS=Homo sapiens]
Nuclear distribution protein nudeE-like 1 [OS=Homo sapiens]
Mammalian ependymin-related protein 1 [OS=Homo sapiens]
Von Willebrand factor [OS=Homo sapiens]
Reticulon-4 receptor [OS=Homo sapiens]
Glutamate receptor 1 [OS=Homo sapiens]
Sodium-dependent neutral amino acid transporter SLC6A17 [OS=Homo sapiens]
Peptidyl-prolyl cis-trans isomerase FKBP2 [OS=Homo sapiens]
NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 8, mitochondrial [OS=Homo sapiens]
Isoform 2 of Rab3 GTPase-activating protein catalytic subunit [OS=Homo sapiens]
Inactive phospholipase C-like protein 1 [OS=Homo sapiens]
Copine-7 [OS=Homo sapiens]
60S ribosomal protein L21 [OS=Homo sapiens]
Rho-related GTP-binding protein RhoB [OS=Homo sapiens]
Myelin protein P0 [OS=Homo sapiens]
Metallothionein-3 [OS=Homo sapiens]
Cytochrome b-c1 complex subunit 8 [OS=Homo sapiens]
Inositol-3-phosphate synthase 1 [OS=Homo sapiens]
FERM, RhoGEF and pleckstrin domain-containing protein 1 [OS=Homo sapiens]
3-ketoacyl-CoA thiolase, peroxisomal [OS=Homo sapiens]
Inter-alpha-trypsin inhibitor heavy chain H4 [OS=Homo sapiens]
Protein dpy-30 homolog [OS=Homo sapiens]
Dystrophia myotonica WD repeat-containing protein [OS=Homo sapiens]
Macrophage Migration inhibitory factor [OS=Homo sapiens]
capping protein, Arp2/3 and myosin-I linker protein 2 [OS=Homo sapiens]
UBX domain-containing protein 6 [OS=Homo sapiens]
Chloride intracellular channel protein 4 [OS=Homo sapiens]

X-ray repair cross-complementing protein 5 [OS=Homo sapiens]
Isoform 3 of Elongation factor 1-delta [OS=Homo sapiens]
Dystrobrevin alpha [OS=Homo sapiens]
CUGBP Elav-like family member 2 [OS=Homo sapiens]
glutathione S-transferase mu 4 [OS=Homo sapiens]
Rab11 family-interacting protein 5 [OS=Homo sapiens]
Nucleolar protein 56 [OS=Homo sapiens]
Copine-8 [OS=Homo sapiens]
40S ribosomal protein S20 [OS=Homo sapiens]
High mobility group nucleosome-binding domain-containing protein 3 [OS=Homo sapiens]
SPARC-like protein 1 [OS=Homo sapiens]
Alcohol dehydrogenase 1A [OS=Homo sapiens]
Proteasome subunit alpha type-3 [OS=Homo sapiens]
DCC-interacting protein 13-alpha [OS=Homo sapiens]
Golgi-associated plant pathogenesis-related protein 1 [OS=Homo sapiens]
Pigment epithelium-derived factor [OS=Homo sapiens]
large neutral amino acids transporter small subunit 1 [OS=Homo sapiens]
Phytanoyl-CoA hydroxylase-interacting protein-like [OS=Homo sapiens]
Voltage-dependent L-type calcium channel subunit beta-4 [OS=Homo sapiens]
rap guanine nucleotide exchange factor 2 [OS=Homo sapiens]
Isoform 3 of Ankyrin repeat and sterile alpha motif domain-containing protein 1B [OS=Homo sapiens]
Myelin expression factor 2 [OS=Homo sapiens]
Disks large-associated protein 3 [OS=Homo sapiens]
Nuclear protein localization protein 4 homolog [OS=Homo sapiens]
Cyclin-dependent-like kinase 5 [OS=Homo sapiens]
SH3 domain-binding glutamic acid-rich-like protein 2 [OS=Homo sapiens]
glucosamine-6-phosphate isomerase 1 [OS=Homo sapiens]
Guanine nucleotide-binding protein subunit alpha-13 [OS=Homo sapiens]
Isoform 2 of Formin-like protein 2 [OS=Homo sapiens]
RIMS-binding protein 2 [OS=Homo sapiens]
Adhesion G protein-coupled receptor L1 [OS=Homo sapiens]
Astrotactin-1 [OS=Homo sapiens]
2-oxoisovalerate dehydrogenase subunit alpha, mitochondrial [OS=Homo sapiens]
Voltage-dependent L-type calcium channel subunit beta-1 [OS=Homo sapiens]
40S ribosomal protein S28 [OS=Homo sapiens]
PEX5-related protein [OS=Homo sapiens]
Kinesin-like protein KIF1A [OS=Homo sapiens]
60S ribosomal protein L24 [OS=Homo sapiens]
BTB/POZ domain-containing protein KCTD8 [OS=Homo sapiens]
UDP-N-acetylglucosamine--peptide N-acetylglucosaminyltransferase 1 10 kDa subunit

[OS=Homo sapiens]
Uncharacterized protein C9orf172 [OS=Homo sapiens]
28S ribosomal protein S36, mitochondrial [OS=Homo sapiens]
Gamma-aminobutyric acid receptor-associated protein-like 2 [OS=Homo sapiens]
Aspartyl aminopeptidase [OS=Homo sapiens]
Isoform 7 of Protein NDRG4 [OS=Homo sapiens]
Protocadherin-7 [OS=Homo sapiens]
NADPH:adrenodoxin oxidoreductase, mitochondrial [OS=Homo sapiens]
NADH dehydrogenase [ubiquinone] iron-sulfur protein 4, mitochondrial [OS=Homo sapiens]
Phosphatidylinositol 4-phosphate 5-kinase type-1 gamma [OS=Homo sapiens]
myeloid-associated differentiation marker [OS=Homo sapiens]
WD repeat-containing protein 13 [OS=Homo sapiens]
Tubulin-specific chaperone D [OS=Homo sapiens]
PRA1 family protein 3 [OS=Homo sapiens]
Plakophilin-4 [OS=Homo sapiens]
thiosulfate sulfurtransferase [OS=Homo sapiens]
Vitronectin [OS=Homo sapiens]
Isoform 1 of Long-chain-fatty-acid--CoA ligase 6 [OS=Homo sapiens]
Neurexin-2 [OS=Homo sapiens]
ATPase ASNA1 [OS=Homo sapiens]
Neurobeachin [OS=Homo sapiens]
60S ribosomal protein L30 [OS=Homo sapiens]
neuronal pentraxin-2 [OS=Homo sapiens]
regulator of G-protein signaling 7 [OS=Homo sapiens]
Protein-tyrosine kinase 2-beta [OS=Homo sapiens]
Isoform 2 of ATPase family AAA domain-containing protein 3A [OS=Homo sapiens]
aminopeptidase B [OS=Homo sapiens]
P2X purinoceptor 7 [OS=Homo sapiens]
40S ribosomal protein S15 [OS=Homo sapiens]
Factor VIII intron 22 protein [OS=Homo sapiens]
E3 ubiquitin-protein ligase CHIP [OS=Homo sapiens]
Putative ATP-dependent RNA helicase DHX30 [OS=Homo sapiens]
Nicastrin [OS=Homo sapiens]
Alpha-tubulin N-acetyltransferase 1 [OS=Homo sapiens]
acyl-coenzyme A thioesterase 1 [OS=Homo sapiens]
Apoptosis inhibitor 5 [OS=Homo sapiens]
Sickle tail protein homolog [OS=Homo sapiens]
signal transducing adapter molecule 1 [OS=Homo sapiens]
Prothymosin alpha [OS=Homo sapiens]
BDNF/NT-3 growth factors receptor [OS=Homo sapiens]

alpha-ketoglutarate-dependent dioxygenase FTO [OS=Homo sapiens]
Caytaxin [OS=Homo sapiens]
Plexin-A2 [OS=Homo sapiens]
Carnitine O-palmitoyltransferase 1, liver isoform [OS=Homo sapiens]
NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 12 [OS=Homo sapiens]
5'(3')-deoxyribonucleotidase, cytosolic type [OS=Homo sapiens]
Protein canopy homolog 2 [OS=Homo sapiens]
ubiquitin-conjugating enzyme E2 D2 [OS=Homo sapiens]
Isoform 3 of UV excision repair protein RAD23 homolog A [OS=Homo sapiens]
abl interactor 1 [OS=Homo sapiens]
HLA class I histocompatibility antigen, B-57 alpha chain [OS=Homo sapiens]
Protein phosphatase methylesterase 1 [OS=Homo sapiens]
Gamma-aminobutyric acid type B receptor subunit 2 [OS=Homo sapiens]
Neuroendocrine convertase 2 [OS=Homo sapiens]
OX-2 membrane glycoprotein [OS=Homo sapiens]
DAZ-associated protein 1 [OS=Homo sapiens]
prenylcysteine oxidase 1 [OS=Homo sapiens]
thimet oligopeptidase [OS=Homo sapiens]
TBC1 domain family member 24 [OS=Homo sapiens]
elongin-C [OS=Homo sapiens]
Gap junction alpha-1 protein [OS=Homo sapiens]
Sorting nexin-6 [OS=Homo sapiens]
MICOS complex subunit MIC26 [OS=Homo sapiens]
60S ribosomal protein L34 [OS=Homo sapiens]
COP9 signalosome complex subunit 1 [OS=Homo sapiens]
Guanine nucleotide-binding protein G(I)/G(S)/G(O) subunit gamma-3 [OS=Homo sapiens]
Bis(5'-adenosyl)-triphosphatase [OS=Homo sapiens]
RNA-binding protein 14 [OS=Homo sapiens]
Isoform 4 of Neuronal membrane glycoprotein M6-b [OS=Homo sapiens]
Dynein light chain roadblock-type 1 [OS=Homo sapiens]
Programmed cell death protein 5 [OS=Homo sapiens]
Rho GTPase-activating protein 44 [OS=Homo sapiens]
Cytochrome c oxidase assembly factor 6 homolog [OS=Homo sapiens]
Secretory carrier-associated membrane protein 1 [OS=Homo sapiens]
STE20/SPS1-related proline-alanine-rich protein kinase [OS=Homo sapiens]
syntaxin-binding protein 5-like [OS=Homo sapiens]
Caldesmon [OS=Homo sapiens]
Neudesin [OS=Homo sapiens]
Oxysterol-binding protein 1 [OS=Homo sapiens]
Nucleobindin-1 [OS=Homo sapiens]

Centrosomal protein of 170 kDa [OS=Homo sapiens]
BRISC and BRCA1-A complex member 1 [OS=Homo sapiens]
APC membrane recruitment protein 2 [OS=Homo sapiens]
Receptor-type tyrosine-protein phosphatase N2 [OS=Homo sapiens]
Actin-related protein 10 [OS=Homo sapiens]
Isoform 1 of Four and a half LIM domains protein 1 [OS=Homo sapiens]
Histamine N-methyltransferase [OS=Homo sapiens]
U1 small nuclear ribonucleoprotein 70 kDa [OS=Homo sapiens]
DnaJ homolog subfamily C member 11 [OS=Homo sapiens]
GRIP1-associated protein 1 [OS=Homo sapiens]
Protein S100-A13 [OS=Homo sapiens]
eukaryotic translation initiation factor 3 subunit C-like protein [OS=Homo sapiens]
Pre-mRNA-processing factor 19 [OS=Homo sapiens]
RNA-binding protein Nova-2 [OS=Homo sapiens]
DnaJ homolog subfamily A member 3, mitochondrial [OS=Homo sapiens]
Ras-related protein Rap-2a [OS=Homo sapiens]
Keratin, type I cytoskeletal 9 [OS=Homo sapiens]
Synaptophysin [OS=Homo sapiens]
Bisphosphoglycerate mutase [OS=Homo sapiens]
Neuroendocrine protein 7B2 [OS=Homo sapiens]
Heme oxygenase 2 [OS=Homo sapiens]
protein 4.1 [OS=Homo sapiens]
Putative hydroxypyruvate isomerase [OS=Homo sapiens]
Protein S100-A1 [OS=Homo sapiens]
26S proteasome non-ATPase regulatory subunit 7 [OS=Homo sapiens]
S-methyl-5'-thioadenosine phosphorylase [OS=Homo sapiens]
Tetratricopeptide repeat protein 7B [OS=Homo sapiens]
Nucleoside diphosphate kinase 3 [OS=Homo sapiens]
ermin [OS=Homo sapiens]
Importin-7 [OS=Homo sapiens]
Synaptogyrin-3 [OS=Homo sapiens]
chromobox protein homolog 3 [OS=Homo sapiens]
Pre-mRNA-splicing factor ATP-dependent RNA helicase DHX15 [OS=Homo sapiens]
MAP7 domain-containing protein 2 [OS=Homo sapiens]
D-aminoacyl-tRNA deacylase 1 [OS=Homo sapiens]
E3 ubiquitin-protein ligase HECTD3 [OS=Homo sapiens]
Hepatocyte growth factor-regulated tyrosine kinase substrate [OS=Homo sapiens]
Importin-5 [OS=Homo sapiens]
Serine/threonine-protein kinase MRCK beta [OS=Homo sapiens]
Egl nine homolog 1 [OS=Homo sapiens]
Isoform 2 of Paraneoplastic antigen-like protein 8B [OS=Homo sapiens]

cadherin-10 [OS=Homo sapiens]
Argininosuccinate synthase [OS=Homo sapiens]
Prefoldin subunit 4 [OS=Homo sapiens]
Isoform 2 of CAP-Gly domain-containing linker protein 1 [OS=Homo sapiens]
Presequence protease, mitochondrial [OS=Homo sapiens]
Cystatin-C [OS=Homo sapiens]
Ciliary neurotrophic factor receptor subunit alpha [OS=Homo sapiens]
ADP-sugar pyrophosphatase [OS=Homo sapiens]
Prefoldin subunit 3 [OS=Homo sapiens]
Alpha-1-acid glycoprotein 2 [OS=Homo sapiens]
14 kDa phosphohistidine phosphatase [OS=Homo sapiens]
N-acetylserotonin O-methyltransferase-like protein [OS=Homo sapiens]
Beta-1-syntrophin [OS=Homo sapiens]
Ubiquitin-conjugating enzyme E2 D3 [OS=Homo sapiens]
Inositol-trisphosphate 3-kinase A [OS=Homo sapiens]
M7GpppX diphosphatase [OS=Homo sapiens]
Myoglobin [OS=Homo sapiens]
ERO1-like protein alpha [OS=Homo sapiens]
beta-1,4-glucuronyltransferase 1 [OS=Homo sapiens]
LYR motif-containing protein 4 [OS=Homo sapiens]
Eukaryotic translation initiation factor 3 subunit F [OS=Homo sapiens]
Protein BRICK1 [OS=Homo sapiens]
e3 ubiquitin-protein ligase UBR4 [OS=Homo sapiens]
Proteasome subunit beta type-4 [OS=Homo sapiens]
transportin-1 [OS=Homo sapiens]
Apoptotic chromatin condensation inducer in the nucleus [OS=Homo sapiens]
TBC1 domain family member 10B [OS=Homo sapiens]
Proteasome subunit alpha type-4 [OS=Homo sapiens]
D-amino-acid oxidase [OS=Homo sapiens]
60S ribosomal protein L18a [OS=Homo sapiens]
40S ribosomal protein S21 [OS=Homo sapiens]
60S ribosomal protein L32 [OS=Homo sapiens]
Inter-alpha-trypsin inhibitor heavy chain H2 [OS=Homo sapiens]
60S ribosomal protein L14 [OS=Homo sapiens]
Secernin-2 [OS=Homo sapiens]
B-cell receptor-associated protein 31 [OS=Homo sapiens]
Receptor-type tyrosine-protein phosphatase-like N [OS=Homo sapiens]
Isoform 3 of Centromere protein V [OS=Homo sapiens]
Hydroxyacylglutathione hydrolase, mitochondrial [OS=Homo sapiens]
exportin-7 [OS=Homo sapiens]
cyclin-Y [OS=Homo sapiens]

Synaptobrevin homolog YKT6 [OS=Homo sapiens]
26S proteasome non-ATPase regulatory subunit 9 [OS=Homo sapiens]
Arf-GAP domain and FG repeat-containing protein 1 [OS=Homo sapiens]
Poly(ADP-ribose) glycohydrolase ARH3 [OS=Homo sapiens]
N-acetylneuraminate cytidylyltransferase [OS=Homo sapiens]
Gamma-aminobutyric acid receptor subunit beta-1 [OS=Homo sapiens]
Isoform B of DnaJ homolog subfamily B member 6 [OS=Homo sapiens]
Nascent polypeptide-associated complex subunit alpha, muscle-specific form [OS=Homo sapiens]
dnaJ homolog subfamily B member 1 [OS=Homo sapiens]
Isoform 2 of Gamma-aminobutyric acid receptor subunit beta-2 [OS=Homo sapiens]
Small glutamine-rich tetratricopeptide repeat-containing protein beta [OS=Homo sapiens]
Trophoblast glycoprotein [OS=Homo sapiens]
Shootin-1 [OS=Homo sapiens]
Rabankyrin-5 [OS=Homo sapiens]
Plasminogen activator inhibitor 1 RNA-binding protein [OS=Homo sapiens]
Sphingomyelin phosphodiesterase 3 [OS=Homo sapiens]
SAP domain-containing ribonucleoprotein [OS=Homo sapiens]
mitochondrial-processing peptidase subunit beta [OS=Homo sapiens]
U2 small nuclear ribonucleoprotein A' [OS=Homo sapiens]
AP-1 complex subunit sigma-1A [OS=Homo sapiens]
Hydroxysteroid dehydrogenase-like protein 2 [OS=Homo sapiens]
Isoform 1 of Serum paraoxonase/arylesterase 2 [OS=Homo sapiens]
Dolichyl-diphosphooligosaccharide--protein glycosyltransferase subunit 2 [OS=Homo sapiens]
cAMP-dependent protein kinase type I-beta regulatory subunit [OS=Homo sapiens]
Epididymal secretory protein E1 [OS=Homo sapiens]
Opalin [OS=Homo sapiens]
Ubiquitin carboxyl-terminal hydrolase 7 [OS=Homo sapiens]
Mitotic spindle-associated MMXD complex subunit MIP18 [OS=Homo sapiens]
probable ATP-dependent RNA helicase DDX5 [OS=Homo sapiens]
26S proteasome non-ATPase regulatory subunit 13 [OS=Homo sapiens]
U6 snRNA-associated Sm-like protein LSm2 [OS=Homo sapiens]
Neuroigin-4, X-linked [OS=Homo sapiens]
Parathymosin [OS=Homo sapiens]
Glutaryl-CoA dehydrogenase, mitochondrial [OS=Homo sapiens]
Centrosomal protein of 76 kDa [OS=Homo sapiens]
fibronectin [OS=Homo sapiens]
WW domain-binding protein 2 [OS=Homo sapiens]
Glutamate decarboxylase 2 [OS=Homo sapiens]
DNA topoisomerase 1 [OS=Homo sapiens]

Numb-like protein [OS=Homo sapiens]
Isoform 2 of Probable ubiquitin carboxyl-terminal hydrolase FAF-X [OS=Homo sapiens]
Fumarylacetoacetase [OS=Homo sapiens]
Interferon-inducible double-stranded RNA-dependent protein kinase activator A [OS=Homo sapiens]
Transmembrane emp24 domain-containing protein 9 [OS=Homo sapiens]
2-aminoethanethiol dioxygenase [OS=Homo sapiens]
Glycerol-3-phosphate dehydrogenase 1-like protein [OS=Homo sapiens]
Intersectin-1 [OS=Homo sapiens]
Ras-related protein Rab-12 [OS=Homo sapiens]
Isoform 3 of Synaptotagmin-7 [OS=Homo sapiens]
DnaJ homolog subfamily B member 4 [OS=Homo sapiens]
Ras-related protein Rab-39B [OS=Homo sapiens]
5'-nucleotidase domain-containing protein 3 [OS=Homo sapiens]
HLA class I histocompatibility antigen, B-41 alpha chain [OS=Homo sapiens]
Sorting nexin-1 [OS=Homo sapiens]
Zinc-alpha-2-glycoprotein [OS=Homo sapiens]
calpain-5 [OS=Homo sapiens]
Pre-mRNA-processing-splicing factor 8 [OS=Homo sapiens]
Aflatoxin B1 aldehyde reductase member 3 [OS=Homo sapiens]
Metabotropic glutamate receptor 4 [OS=Homo sapiens]
Protein phosphatase 1 regulatory subunit 21 [OS=Homo sapiens]
Eukaryotic translation initiation factor 2 subunit 1 [OS=Homo sapiens]
Tumor protein p63-regulated gene 1-like protein [OS=Homo sapiens]
Sorting nexin-27 [OS=Homo sapiens]
Lysosome-associated membrane glycoprotein 1 [OS=Homo sapiens]
Endothelial differentiation-related factor 1 [OS=Homo sapiens]
Mitochondrial 10-formyltetrahydrofolate dehydrogenase [OS=Homo sapiens]
5'-nucleotidase [OS=Homo sapiens]
Peflin [OS=Homo sapiens]
Ephrin type-B receptor 2 [OS=Homo sapiens]
High mobility group nucleosome-binding domain-containing protein 4 [OS=Homo sapiens]
O-acetyl-ADP-ribose deacetylase MACROD1 [OS=Homo sapiens]
Metaxin-2 [OS=Homo sapiens]
Inverted formin-2 [OS=Homo sapiens]
Formin-2 [OS=Homo sapiens]
charged multivesicular body protein 6 [OS=Homo sapiens]
60S ribosomal protein L22 [OS=Homo sapiens]
Rho-related GTP-binding protein RhoC [OS=Homo sapiens]
SLIT-ROBO Rho GTPase-activating protein 2 [OS=Homo sapiens]

Isoform 2 of Afadin [OS=Homo sapiens]
Cullin-associated NEDD8-dissociated protein 2 [OS=Homo sapiens]
BTB/POZ domain-containing protein KCTD16 [OS=Homo sapiens]
Bcl-2-like protein 13 [OS=Homo sapiens]
Lambda-crystallin homolog [OS=Homo sapiens]
Phosphatase and actin regulator 1 [OS=Homo sapiens]
NAD-dependent protein deacylase sirtuin-5, mitochondrial [OS=Homo sapiens]
COP9 signalosome complex subunit 9 [OS=Homo sapiens]
ADP-ribosylation factor GTPase-activating protein 1 [OS=Homo sapiens]
Ketosamine-3-kinase [OS=Homo sapiens]
Immunoglobulin lambda variable 3-21 [OS=Homo sapiens]
lysosomal Pro-X carboxypeptidase [OS=Homo sapiens]
coatomer subunit alpha [OS=Homo sapiens]
Sorting nexin-2 [OS=Homo sapiens]
Protein phosphatase 1 regulatory subunit 12C [OS=Homo sapiens]
Serine/threonine-protein phosphatase 2A 56 kDa regulatory subunit delta isoform [OS=Homo sapiens]
sialic acid synthase [OS=Homo sapiens]
IST1 homolog [OS=Homo sapiens]
26S proteasome regulatory subunit 10B [OS=Homo sapiens]
serine/arginine repetitive matrix protein 2 [OS=Homo sapiens]
Fragile X mental retardation syndrome-related protein 1 [OS=Homo sapiens]
Coatomer subunit beta' [OS=Homo sapiens]
Serine/threonine-protein kinase 32C [OS=Homo sapiens]
DnaJ homolog subfamily C member 5 [OS=Homo sapiens]
60S ribosomal protein L35a [OS=Homo sapiens]
fibronectin type III and SPRY domain-containing protein 1 [OS=Homo sapiens]
isocitrate dehydrogenase [NAD] subunit gamma, mitochondrial [OS=Homo sapiens]
Rab GTPase-binding effector protein 1 [OS=Homo sapiens]
integrin alpha-6 [OS=Homo sapiens]
proteasome subunit beta type-3 [OS=Homo sapiens]
Tyrosine-protein kinase Fyn [OS=Homo sapiens]
Integrin beta-4 [OS=Homo sapiens]
plexin-D1 [OS=Homo sapiens]
Histone-binding protein RBBP4 [OS=Homo sapiens]
AP-1 complex subunit mu-1 [OS=Homo sapiens]
Serine/arginine repetitive matrix protein 1 [OS=Homo sapiens]
Acylphosphatase-1 [OS=Homo sapiens]
Bridging integrator 2 [OS=Homo sapiens]
Metabotropic glutamate receptor 5 [OS=Homo sapiens]
Histidine triad nucleotide-binding protein 2, mitochondrial [OS=Homo sapiens]

Threonine--tRNA ligase, cytoplasmic [OS=Homo sapiens]
Ubiquinone biosynthesis monooxygenase COQ6, mitochondrial [OS=Homo sapiens]
RNA binding protein fox-1 homolog 3 [OS=Homo sapiens]
Constitutive coactivator of PPAR-gamma-like protein 1 [OS=Homo sapiens]
Nesprin-1 [OS=Homo sapiens]
ribulose-phosphate 3-epimerase [OS=Homo sapiens]
GMP reductase 2 [OS=Homo sapiens]
Double C2-like domain-containing protein alpha [OS=Homo sapiens]
pantothenate kinase 4 [OS=Homo sapiens]
26S proteasome non-ATPase regulatory subunit 4 [OS=Homo sapiens]
Protein AHNAK2 [OS=Homo sapiens]
excitatory amino acid transporter 4 [OS=Homo sapiens]
Calcium-transporting ATPase type 2C member 1 [OS=Homo sapiens]
Lipoamide acyltransferase component of branched-chain alpha-keto acid dehydrogenase complex, mitochondrial [OS=Homo sapiens]
Aspartate--tRNA ligase, cytoplasmic [OS=Homo sapiens]
Serine/threonine-protein phosphatase Pgam5, mitochondrial [OS=Homo sapiens]
Cullin-1 [OS=Homo sapiens]
Thioredoxin domain-containing protein 5 [OS=Homo sapiens]
E3 ubiquitin-protein ligase HECW2 [OS=Homo sapiens]
BAG family molecular chaperone regulator 3 [OS=Homo sapiens]
Serine-threonine kinase receptor-associated protein [OS=Homo sapiens]
Barrier-to-autointegration factor [OS=Homo sapiens]
Isobutyryl-CoA dehydrogenase, mitochondrial [OS=Homo sapiens]
polyadenylate-binding protein 2 [OS=Homo sapiens]
prostaglandin F2 receptor negative regulator [OS=Homo sapiens]
Protein phosphatase 1B [OS=Homo sapiens]
Serine protease HTRA1 [OS=Homo sapiens]
Ena/VASP-like protein [OS=Homo sapiens]
phosphoacetylglucosamine mutase [OS=Homo sapiens]
Protein ABHD14B [OS=Homo sapiens]
acyl-CoA-binding domain-containing protein 7 [OS=Homo sapiens]
Isoform 2 of Neuroendocrine protein 7B2 [OS=Homo sapiens]
Disintegrin and metalloproteinase domain-containing protein 11 [OS=Homo sapiens]
ATP synthase subunit f, mitochondrial [OS=Homo sapiens]
Isoform 2 of Extended synaptotagmin-2 [OS=Homo sapiens]
Exocyst complex component 4 [OS=Homo sapiens]
Ras-related protein Rab-18 [OS=Homo sapiens]
Glutamine amidotransferase-like class 1 domain-containing protein 1 [OS=Homo sapiens]
40S ribosomal protein S12 [OS=Homo sapiens]
PH domain leucine-rich repeat-containing protein phosphatase 1 [OS=Homo sapiens]

Hepatoma-derived growth factor-related protein 2 [OS=Homo sapiens]
NADH dehydrogenase [ubiquinone] iron-sulfur protein 7, mitochondrial [OS=Homo sapiens]
60S ribosomal protein L26-like 1 [OS=Homo sapiens]
Translin-associated protein X [OS=Homo sapiens]
GMP synthase [glutamine-hydrolyzing] [OS=Homo sapiens]
Vesicle-trafficking protein SEC22b [OS=Homo sapiens]
Breakpoint cluster region protein [OS=Homo sapiens]
ras-related protein rab-27b [OS=Homo sapiens]
Platelet-activating factor acetylhydrolase IB subunit gamma [OS=Homo sapiens]
28 kDa heat- and acid-stable phosphoprotein [OS=Homo sapiens]
sorting nexin-5 [OS=Homo sapiens]
Serine/threonine-protein kinase BRSK2 [OS=Homo sapiens]
cAMP-dependent protein kinase catalytic subunit beta [OS=Homo sapiens]
Synemin [OS=Homo sapiens]
poly(U)-binding-splicing factor PUF60 [OS=Homo sapiens]
Voltage-dependent P/Q-type calcium channel subunit alpha-1A [OS=Homo sapiens]
26s proteasome non-atpase regulatory subunit 12 [OS=Homo sapiens]
prefoldin subunit 5 [OS=Homo sapiens]
ras-related protein Rap-2b [OS=Homo sapiens]
Neural proliferation differentiation and control protein 1 [OS=Homo sapiens]
Leucine-rich glioma-inactivated protein 1 [OS=Homo sapiens]
Hippocalcin-like protein 4 [OS=Homo sapiens]
Transmembrane emp24 domain-containing protein 4 [OS=Homo sapiens]
regulator complex protein LAMTOR1 [OS=Homo sapiens]
cleavage stimulation factor subunit 2 [OS=Homo sapiens]
protein lin-7 homolog B [OS=Homo sapiens]
Seizure 6-like protein [OS=Homo sapiens]
Solute carrier family 25 member 46 [OS=Homo sapiens]
Nuclear receptor-interacting protein 2 [OS=Homo sapiens]
60S ribosomal protein L10A [OS=Homo sapiens]
60S ribosomal protein L26 [OS=Homo sapiens]
Glutamate receptor ionotropic, NMDA 1 [OS=Homo sapiens]
Glutathione S-transferase theta-2B [OS=Homo sapiens]
ubiquitin-associated and SH3 domain-containing protein B [OS=Homo sapiens]
Cadherin-15 [OS=Homo sapiens]
Protein turtle homolog B [OS=Homo sapiens]
mannose-6-phosphate isomerase [OS=Homo sapiens]
Mitochondrial fission regulator 1-like [OS=Homo sapiens]
Phosphatidylinositol transfer protein beta isoform [OS=Homo sapiens]
Ribosome-binding protein 1 [OS=Homo sapiens]

Isoform 2 of Mitochondrial fission factor [OS=Homo sapiens]
AP-3 complex subunit sigma-1 [OS=Homo sapiens]
Ribonuclease T2 [OS=Homo sapiens]
Mitochondrial-processing peptidase subunit alpha [OS=Homo sapiens]
DOMON domain-containing protein FRRS1L [OS=Homo sapiens]
Microtubule-associated proteins 1A/1B light chain 3A [OS=Homo sapiens]
26S proteasome non-ATPase regulatory subunit 3 [OS=Homo sapiens]
Calcium/calmodulin-dependent protein kinase kinase 2 [OS=Homo sapiens]
RNA-binding protein EWS [OS=Homo sapiens]
Eukaryotic translation initiation factor 3 subunit B [OS=Homo sapiens]
Isoform 4 of Nuclear factor 1 X-type [OS=Homo sapiens]
Endophilin-B1 [OS=Homo sapiens]
UPF0696 protein C11orf68 [OS=Homo sapiens]
Serine--tRNA ligase, mitochondrial [OS=Homo sapiens]
DNA-3-methyladenine glycosylase [OS=Homo sapiens]
galactokinase [OS=Homo sapiens]
Ras-related protein Rab-21 [OS=Homo sapiens]
Diphosphoinositol polyphosphate phosphohydrolase 1 [OS=Homo sapiens]
serine/arginine-rich splicing factor 9 [OS=Homo sapiens]
Branched-chain-amino-acid aminotransferase, cytosolic [OS=Homo sapiens]
Serine/threonine-protein phosphatase 6 regulatory subunit 2 [OS=Homo sapiens]
Protein phosphatase inhibitor 2 [OS=Homo sapiens]
Sodium/hydrogen exchanger 1 [OS=Homo sapiens]
COP9 signalosome complex subunit 2 [OS=Homo sapiens]
Cathepsin Z [OS=Homo sapiens]
Voltage-dependent L-type calcium channel subunit beta-3 [OS=Homo sapiens]
glycolipid transfer protein [OS=Homo sapiens]
Protein CutA [OS=Homo sapiens]
Protein lunapark [OS=Homo sapiens]
Coiled-coil domain-containing protein 136 [OS=Homo sapiens]
Voltage-gated potassium channel subunit beta-2 [OS=Homo sapiens]
Mitochondrial import inner membrane translocase subunit Tim10 [OS=Homo sapiens]
NADH dehydrogenase [ubiquinone] 1 subunit C2 [OS=Homo sapiens]
39S ribosomal protein L4, mitochondrial [OS=Homo sapiens]
26S proteasome regulatory subunit 4 [OS=Homo sapiens]
Vacuolar protein sorting-associated protein 53 homolog [OS=Homo sapiens]
Chromobox protein homolog 1 [OS=Homo sapiens]
serine/threonine-protein kinase B-raf [OS=Homo sapiens]
Ubiquitin-fold modifier 1 [OS=Homo sapiens]
Transmembrane protein 65 [OS=Homo sapiens]
Isoform 3 of Regulator of G-protein signaling 6 [OS=Homo sapiens]

Membrane-associated guanylate kinase, WW and PDZ domain-containing protein 2 [OS=Homo sapiens]
transgelin [OS=Homo sapiens]
paralemmin-2 [OS=Homo sapiens]
Regulating synaptic membrane exocytosis protein 3 [OS=Homo sapiens]
NHP2-like protein 1 [OS=Homo sapiens]
breast carcinoma-amplified sequence 3 [OS=Homo sapiens]
Oxysterol-binding protein-related protein 1 [OS=Homo sapiens]
Immunoglobulin lambda variable 1-47 [OS=Homo sapiens]
Uncharacterized protein KIAA1107 [OS=Homo sapiens]
Sortilin-related receptor [OS=Homo sapiens]
Ataxin-10 [OS=Homo sapiens]
Purkinje cell protein 2 homolog [OS=Homo sapiens]
guanylate cyclase soluble subunit alpha-2 [OS=Homo sapiens]
26S proteasome non-ATPase regulatory subunit 14 [OS=Homo sapiens]
40S ribosomal protein S27-like [OS=Homo sapiens]
Nuclear pore complex protein Nup93 [OS=Homo sapiens]
Redox-regulatory protein FAM213A [OS=Homo sapiens]
Protein spire homolog 1 [OS=Homo sapiens]
Glucosamine-6-phosphate isomerase 2 [OS=Homo sapiens]
gamma-glutamylcyclotransferase [OS=Homo sapiens]
Eukaryotic translation initiation factor 3 subunit A [OS=Homo sapiens]
Sedoheptulokinase [OS=Homo sapiens]
Beta-2-glycoprotein 1 [OS=Homo sapiens]
5'-AMP-activated protein kinase catalytic subunit alpha-2 [OS=Homo sapiens]
Protein phosphatase 1 regulatory subunit 14A [OS=Homo sapiens]
Metabotropic glutamate receptor 1 [OS=Homo sapiens]
Thioredoxin-related transmembrane protein 1 [OS=Homo sapiens]
Proteasome subunit beta type-7 [OS=Homo sapiens]
C4b-binding protein alpha chain [OS=Homo sapiens]
methionine aminopeptidase 2 [OS=Homo sapiens]
RNA-binding protein 25 [OS=Homo sapiens]
Chitinase domain-containing protein 1 [OS=Homo sapiens]
complement factor H [OS=Homo sapiens]
Small nuclear ribonucleoprotein-associated proteins B and B' [OS=Homo sapiens]
Ornithine aminotransferase, mitochondrial [OS=Homo sapiens]
Casein kinase I isoform epsilon [OS=Homo sapiens]
Ubiquitin-like modifier-activating enzyme ATG7 [OS=Homo sapiens]
Acylglycerol kinase, mitochondrial [OS=Homo sapiens]
Isoform 3 of Ephexin-1 [OS=Homo sapiens]
Ras-related protein Rab-4A [OS=Homo sapiens]

Protein transport protein sec24c [OS=Homo sapiens]
PRA1 family protein 2 [OS=Homo sapiens]
Proto-oncogene tyrosine-protein kinase Src [OS=Homo sapiens]
Ubiquilin-1 [OS=Homo sapiens]
Transformer-2 protein homolog alpha [OS=Homo sapiens]
Transmembrane protein 132A [OS=Homo sapiens]
N-acyl-phosphatidylethanolamine-hydrolyzing phospholipase D [OS=Homo sapiens]
Isoform LMW of Kininogen-1 [OS=Homo sapiens]
Transmembrane protein 126A [OS=Homo sapiens]
Histone-arginine methyltransferase CARM1 [OS=Homo sapiens]
Hippocalcin-like protein 1 [OS=Homo sapiens]
dihydropyrimidinase [OS=Homo sapiens]
Immunoglobulin-binding protein 1 [OS=Homo sapiens]
ATP synthase subunit g, mitochondrial [OS=Homo sapiens]
Ubiquilin-2 [OS=Homo sapiens]
ATP-binding cassette sub-family B member 8, mitochondrial [OS=Homo sapiens]
geranylgeranyl transferase type-2 subunit alpha [OS=Homo sapiens]
Lysosomal acid phosphatase [OS=Homo sapiens]
thrombospondin-1 [OS=Homo sapiens]
TATA-binding protein-associated factor 2N [OS=Homo sapiens]
Transmembrane emp24 domain-containing protein 10 [OS=Homo sapiens]
WD repeat-containing protein 48 [OS=Homo sapiens]
Leucine-rich repeat-containing protein 57 [OS=Homo sapiens]
Acyl-CoA dehydrogenase family member 9, mitochondrial [OS=Homo sapiens]
Neutrophil elastase [OS=Homo sapiens]
Noelin [OS=Homo sapiens]
small ubiquitin-related modifier 4 [OS=Homo sapiens]
Paraplegin [OS=Homo sapiens]
Deaminated glutathione amidase [OS=Homo sapiens]
calcium/calmodulin-dependent protein kinase type 1D [OS=Homo sapiens]
Enoyl-[acyl-carrier-protein] reductase, mitochondrial [OS=Homo sapiens]
Golgi reassembly-stacking protein 2 [OS=Homo sapiens]
Fibroblast growth factor 1 [OS=Homo sapiens]
Dystroglycan [OS=Homo sapiens]
Uroporphyrinogen decarboxylase [OS=Homo sapiens]
NEDD8-conjugating enzyme Ubc12 [OS=Homo sapiens]
Enhancer of mRNA-decapping protein 4 [OS=Homo sapiens]
Synaptojanin-2-binding protein [OS=Homo sapiens]
D-glutamate cyclase, mitochondrial [OS=Homo sapiens]
60s ribosomal protein l38 [OS=Homo sapiens]
Copine-4 [OS=Homo sapiens]

SH3 domain-containing kinase-binding protein 1 [OS=Homo sapiens]
Phosphatidylinositol phosphatase SAC1 [OS=Homo sapiens]
Complement C1q subcomponent subunit C [OS=Homo sapiens]
Tensin-1 [OS=Homo sapiens]
Acetolactate synthase-like protein [OS=Homo sapiens]
Emerin [OS=Homo sapiens]
transcription factor BTF3 [OS=Homo sapiens]
CD59 glycoprotein [OS=Homo sapiens]
39S ribosomal protein L12, mitochondrial [OS=Homo sapiens]
Cytochrome c oxidase subunit 6C [OS=Homo sapiens]
Ran-binding protein 9 [OS=Homo sapiens]
Kinectin [OS=Homo sapiens]
Glutathione S-transferase kappa 1 [OS=Homo sapiens]
Maturin [OS=Homo sapiens]
Potassium voltage-gated channel subfamily A member 3 [OS=Homo sapiens]
spermidine synthase [OS=Homo sapiens]
Glutathione S-transferase A2 [OS=Homo sapiens]
T-cell immunomodulatory protein [OS=Homo sapiens]
Putative phospholipase B-like 2 [OS=Homo sapiens]
nuclear migration protein nudC [OS=Homo sapiens]
Isoform 3 of Microtubule-associated protein 4 [OS=Homo sapiens]
Isoform 2 of Choline transporter-like protein 2 [OS=Homo sapiens]
lysozyme c [OS=Homo sapiens]
Ephrin type-A receptor 5 [OS=Homo sapiens]
Farnesyl pyrophosphate synthase [OS=Homo sapiens]
Retinol-binding protein 4 [OS=Homo sapiens]
Proteasomal ubiquitin receptor ADRM1 [OS=Homo sapiens]
Calcium uniporter protein, mitochondrial [OS=Homo sapiens]
Serine/arginine-rich splicing factor 5 [OS=Homo sapiens]
Fibromodulin [OS=Homo sapiens]
Secretogranin-3 [OS=Homo sapiens]
DnaJ homolog subfamily C member 8 [OS=Homo sapiens]
Nuclear receptor coactivator 7 [OS=Homo sapiens]
Inositol polyphosphate 1-phosphatase [OS=Homo sapiens]
Pantothenate kinase 2, mitochondrial [OS=Homo sapiens]
Late secretory pathway protein AVL9 homolog [OS=Homo sapiens]
cholecystokinin [OS=Homo sapiens]
Isoleucine--tRNA ligase, mitochondrial [OS=Homo sapiens]
Splicing factor 1 [OS=Homo sapiens]
Transcription elongation factor A protein-like 2 [OS=Homo sapiens]
Mitochondrial import inner membrane translocase subunit Tim8 A [OS=Homo

sapiens]
Integrin beta-1 [OS=Homo sapiens]
Citrate lyase subunit beta-like protein, mitochondrial [OS=Homo sapiens]
Calcium/calmodulin-dependent protein kinase kinase 1 [OS=Homo sapiens]
RNA-binding protein 4 [OS=Homo sapiens]
Guanosine-3',5'-bis(diphosphate) 3'-pyrophosphohydrolase MESH1 [OS=Homo sapiens]
Dystrophin [OS=Homo sapiens]
cAMP-dependent protein kinase inhibitor alpha [OS=Homo sapiens]
GMP reductase 1 [OS=Homo sapiens]
Immunoglobulin kappa variable 3-15 [OS=Homo sapiens]
protein SCAI [OS=Homo sapiens]
Protein MGARP [OS=Homo sapiens]
Immunoglobulin kappa variable 2D-40 [OS=Homo sapiens]
Ragulator complex protein LAMTOR5 [OS=Homo sapiens]
Catenin delta-1 [OS=Homo sapiens]
Protein phosphatase 1 regulatory subunit 12A [OS=Homo sapiens]
5'-AMP-activated protein kinase catalytic subunit alpha-1 [OS=Homo sapiens]
LON peptidase N-terminal domain and RING finger protein 2 [OS=Homo sapiens]
Alsin [OS=Homo sapiens]
Kynurenine--oxoglutarate transaminase 1 [OS=Homo sapiens]
SH3 and PX domain-containing protein 2A [OS=Homo sapiens]
RNA 3'-terminal phosphate cyclase [OS=Homo sapiens]
BH3-interacting domain death agonist [OS=Homo sapiens]
tetratricopeptide repeat protein 1 [OS=Homo sapiens]
Tubulin-specific chaperone E [OS=Homo sapiens]
Protein S100-A16 [OS=Homo sapiens]
SURP and G-patch domain-containing protein 2 [OS=Homo sapiens]
40S ribosomal protein S27 [OS=Homo sapiens]
Aldehyde dehydrogenase family 16 member A1 [OS=Homo sapiens]
inosine-5'-monophosphate dehydrogenase 2 [OS=Homo sapiens]
calmodulin regulator protein PCP4 [OS=Homo sapiens]
EPM2A-interacting protein 1 [OS=Homo sapiens]
Purkinje cell protein 4-like protein 1 [OS=Homo sapiens]
tumor susceptibility gene 101 protein [OS=Homo sapiens]
proline-rich transmembrane protein 1 [OS=Homo sapiens]
Keratin, type II cuticular Hb1 [OS=Homo sapiens]
Tyrosine-protein kinase Lyn [OS=Homo sapiens]
Sorbin and SH3 domain-containing protein 2 [OS=Homo sapiens]
tissue factor [OS=Homo sapiens]
Triple functional domain protein [OS=Homo sapiens]

UBX domain-containing protein 4 [OS=Homo sapiens]
A-kinase anchor protein 5 [OS=Homo sapiens]
protein S100-A6 [OS=Homo sapiens]
Retinol dehydrogenase 13 [OS=Homo sapiens]
Partner of Y14 and mago [OS=Homo sapiens]
Beta-galactosidase [OS=Homo sapiens]
WD repeat-containing protein 47 [OS=Homo sapiens]
1-phosphatidylinositol 4,5-bisphosphate phosphodiesterase gamma-1 [OS=Homo sapiens]
NADH-cytochrome b5 reductase 1 [OS=Homo sapiens]
choline-phosphate cytidylyltransferase A [OS=Homo sapiens]
Neuroendocrine convertase 1 [OS=Homo sapiens]
Serine/threonine-protein phosphatase CPPED1 [OS=Homo sapiens]
Integrin beta-5 [OS=Homo sapiens]
Receptor expression-enhancing protein 5 [OS=Homo sapiens]
Cytochrome b5 [OS=Homo sapiens]
Claudin-11 [OS=Homo sapiens]
Long-chain fatty acid transport protein 4 [OS=Homo sapiens]
nicotinate phosphoribosyltransferase [OS=Homo sapiens]
armadillo repeat protein deleted in velo-cardio-facial syndrome [OS=Homo sapiens]
Inorganic pyrophosphatase 2, mitochondrial [OS=Homo sapiens]
Coiled-coil domain-containing protein 177 [OS=Homo sapiens]
60S ribosomal protein L27 [OS=Homo sapiens]
secretagoin [OS=Homo sapiens]
STE20-like serine/threonine-protein kinase [OS=Homo sapiens]
Sorting nexin-30 [OS=Homo sapiens]
Vacuolar protein sorting-associated protein 29 [OS=Homo sapiens]
ectonucleoside triphosphate diphosphohydrolase 2 [OS=Homo sapiens]
Tyrosine-protein phosphatase non-receptor type 23 [OS=Homo sapiens]
26S proteasome non-ATPase regulatory subunit 10 [OS=Homo sapiens]
Junctional adhesion molecule B [OS=Homo sapiens]
Neurocalcin-delta [OS=Homo sapiens]
methyltransferase-like protein 7A [OS=Homo sapiens]
Isoform 1 of Glycerol kinase [OS=Homo sapiens]
Protocadherin-10 [OS=Homo sapiens]
Protein-glutamine gamma-glutamyltransferase 2 [OS=Homo sapiens]
Double-stranded RNA-specific adenosine deaminase [OS=Homo sapiens]
Cancer-related nucleoside-triphosphatase [OS=Homo sapiens]
maleylacetoacetate isomerase [OS=Homo sapiens]
Membrane-associated progesterone receptor component 2 [OS=Homo sapiens]
FXFD domain-containing ion transport regulator 7 [OS=Homo sapiens]

Disco-interacting protein 2 homolog C [OS=Homo sapiens]
Replication protein A 70 kDa DNA-binding subunit [OS=Homo sapiens]
Sodium/potassium/calcium exchanger 2 [OS=Homo sapiens]
valacyclovir hydrolase [OS=Homo sapiens]
Prostaglandin E synthase 2 [OS=Homo sapiens]
Spermatogenesis-associated protein 20 [OS=Homo sapiens]
arginine--tRNA ligase, cytoplasmic [OS=Homo sapiens]
Ras-related protein R-Ras [OS=Homo sapiens]
ER membrane protein complex subunit 2 [OS=Homo sapiens]
GDNF family receptor alpha-2 [OS=Homo sapiens]
Calmodulin-like protein 3 [OS=Homo sapiens]
Leucine-rich repeat-containing protein 20 [OS=Homo sapiens]
DNA topoisomerase 2-beta [OS=Homo sapiens]
Cytochrome b-245 heavy chain [OS=Homo sapiens]
U5 small nuclear ribonucleoprotein 200 kDa helicase [OS=Homo sapiens]
Ephrin type-B receptor 6 [OS=Homo sapiens]
Phosphoglucomutase-2 [OS=Homo sapiens]
protein quaking [OS=Homo sapiens]
2',5'-phosphodiesterase 12 [OS=Homo sapiens]
Plasminogen [OS=Homo sapiens]
Transmembrane protein 109 [OS=Homo sapiens]
CUGBP Elav-like family member 1 [OS=Homo sapiens]
26S proteasome non-ATPase regulatory subunit 11 [OS=Homo sapiens]
Sodium channel subunit beta-3 [OS=Homo sapiens]
Isoform 2 of ELKS/Rab6-interacting/CAST family member 1 [OS=Homo sapiens]
Betaine--homocysteine S-methyltransferase 1 [OS=Homo sapiens]
Exocyst complex component 8 [OS=Homo sapiens]
Solute carrier family 2, facilitated glucose transporter member 3 [OS=Homo sapiens]
Short/branched chain specific acyl-CoA dehydrogenase, mitochondrial [OS=Homo sapiens]
sorting nexin-4 [OS=Homo sapiens]
Nuclear receptor-binding protein [OS=Homo sapiens]
Cytoskeleton-associated protein 5 [OS=Homo sapiens]
ubiquitin carboxyl-terminal hydrolase 15 [OS=Homo sapiens]
Isoform 2 of Cullin-4B [OS=Homo sapiens]
FAD-linked sulfhydryl oxidase ALR [OS=Homo sapiens]
YLP motif-containing protein 1 [OS=Homo sapiens]
Isoform 4 of F-box/LRR-repeat protein 18 [OS=Homo sapiens]
volume-regulated anion channel subunit LRRC8A [OS=Homo sapiens]
Cellular retinoic acid-binding protein 1 [OS=Homo sapiens]
Protein TFG [OS=Homo sapiens]

Protein shisa-7 [OS=Homo sapiens]
N-terminal kinase-like protein [OS=Homo sapiens]
Raftlin-2 [OS=Homo sapiens]
3-hydroxyisobutyryl-CoA hydrolase, mitochondrial [OS=Homo sapiens]
Eukaryotic translation initiation factor 5 [OS=Homo sapiens]
F-box only protein 41 [OS=Homo sapiens]
tudor and KH domain-containing protein [OS=Homo sapiens]
1-acyl-sn-glycerol-3-phosphate acyltransferase alpha [OS=Homo sapiens]
Metastasis-associated protein MTA1 [OS=Homo sapiens]
queuosine salvage protein [OS=Homo sapiens]
Rab-like protein 6 [OS=Homo sapiens]
Very-long-chain 3-oxoacyl-CoA reductase [OS=Homo sapiens]
Structural maintenance of chromosomes protein 3 [OS=Homo sapiens]
Apolipoprotein C-III [OS=Homo sapiens]
IQ motif and SEC7 domain-containing protein 3 [OS=Homo sapiens]
Retinol-binding protein 1 [OS=Homo sapiens]
Serine hydroxymethyltransferase, mitochondrial [OS=Homo sapiens]
prefoldin subunit 1 [OS=Homo sapiens]
Ras GTPase-activating protein-binding protein 2 [OS=Homo sapiens]
Syntaxin-16 [OS=Homo sapiens]
Claudin domain-containing protein 1 [OS=Homo sapiens]
N-sulphoglucosamine sulphohydrolase [OS=Homo sapiens]
EH domain-containing protein 2 [OS=Homo sapiens]
Protein mago nashi homolog [OS=Homo sapiens]
Potassium voltage-gated channel subfamily KQT member 2 [OS=Homo sapiens]
Citron Rho-interacting kinase [OS=Homo sapiens]
Erlin-2 [OS=Homo sapiens]
glycerophosphodiester phosphodiesterase 1 [OS=Homo sapiens]
L-2-hydroxyglutarate dehydrogenase, mitochondrial [OS=Homo sapiens]
Carboxypeptidase D [OS=Homo sapiens]
Immunoglobulin kappa variable 3-20 [OS=Homo sapiens]
Protein ABHD17B [OS=Homo sapiens]
RNA-binding protein with serine-rich domain 1 [OS=Homo sapiens]
WD repeat-containing protein 44 [OS=Homo sapiens]
Histone-lysine N-methyltransferase SETD7 [OS=Homo sapiens]
B-cell receptor-associated protein 29 [OS=Homo sapiens]
Isoform 2 of Matrix-remodeling-associated protein 7 [OS=Homo sapiens]
Nuclease EXOG, mitochondrial [OS=Homo sapiens]
Beta-adrenergic receptor kinase 1 [OS=Homo sapiens]
Copper transport protein ATOX1 [OS=Homo sapiens]
Protein Fam98b [OS=Homo sapiens]

Ran-specific GTPase-activating protein [OS=Homo sapiens]
Nischarin [OS=Homo sapiens]
proton myo-inositol cotransporter [OS=Homo sapiens]
sorting nexin-3 [OS=Homo sapiens]
Membrane-associated guanylate kinase, WW and PDZ domain-containing protein 1 [OS=Homo sapiens]
Zinc finger RNA-binding protein [OS=Homo sapiens]
NADH-cytochrome b5 reductase 2 [OS=Homo sapiens]
Malonyl-CoA decarboxylase, mitochondrial [OS=Homo sapiens]
Eukaryotic peptide chain release factor subunit 1 [OS=Homo sapiens]
Coiled-coil domain-containing protein 127 [OS=Homo sapiens]
Intercellular adhesion molecule 1 [OS=Homo sapiens]
mitogen-activated protein kinase kinase kinase kinase 3 [OS=Homo sapiens]
Methionine aminopeptidase 1 [OS=Homo sapiens]
RNA binding protein fox-1 homolog 2 [OS=Homo sapiens]
VPS10 domain-containing receptor SorCS2 [OS=Homo sapiens]
Immunoglobulin superfamily member 1 [OS=Homo sapiens]
Probable ATP-dependent RNA helicase DDX6 [OS=Homo sapiens]
tether containing UBX domain for GLUT4 [OS=Homo sapiens]
OTU domain-containing protein 7B [OS=Homo sapiens]
Inter-alpha-trypsin inhibitor heavy chain H1 [OS=Homo sapiens]
Rho guanine nucleotide exchange factor 11 [OS=Homo sapiens]
Transmembrane protein 43 [OS=Homo sapiens]
E3 ubiquitin-protein ligase LRSAM1 [OS=Homo sapiens]
Syntaphilin [OS=Homo sapiens]
40S ribosomal protein S15a [OS=Homo sapiens]
Isoform 2 of Probable hydrolase PNKD [OS=Homo sapiens]
1-phosphatidylinositol 4,5-bisphosphate phosphodiesterase beta-4 [OS=Homo sapiens]
Ankyrin repeat domain-containing protein 24 [OS=Homo sapiens]
coiled-coil-helix-coiled-coil-helix domain-containing protein 7 [OS=Homo sapiens]
A-kinase anchor protein 1, mitochondrial [OS=Homo sapiens]
Caprin-1 [OS=Homo sapiens]
Contactin-associated protein-like 5 [OS=Homo sapiens]
UPF0160 protein MYG1, mitochondrial [OS=Homo sapiens]
Far upstream element-binding protein 3 [OS=Homo sapiens]
ATP synthase subunit e, mitochondrial [OS=Homo sapiens]
annexin A3 [OS=Homo sapiens]
ADP-ribosylation factor-like protein 8A [OS=Homo sapiens]
Chondroitin sulfate proteoglycan 5 [OS=Homo sapiens]
40S ribosomal protein S30 [OS=Homo sapiens]
Myotubularin-related protein 1 [OS=Homo sapiens]

Neuropilin-2 [OS=Homo sapiens]
Striatin-3 [OS=Homo sapiens]
Tetratricopeptide repeat protein 9C [OS=Homo sapiens]
metallothionein-1X [OS=Homo sapiens]
Protein CREG1 [OS=Homo sapiens]
40S ribosomal protein S17 [OS=Homo sapiens]
Isovaleryl-CoA dehydrogenase, mitochondrial [OS=Homo sapiens]
Signal recognition particle 19 kDa protein [OS=Homo sapiens]
eukaryotic translation initiation factor 6 [OS=Homo sapiens]
GTP cyclohydrolase 1 feedback regulatory protein [OS=Homo sapiens]
Protein DEK [OS=Homo sapiens]
F-box/LRR-repeat protein 16 [OS=Homo sapiens]
Monoacylglycerol lipase ABHD12 [OS=Homo sapiens]
Myeloperoxidase [OS=Homo sapiens]
RalBP1-associated Eps domain-containing protein 2 [OS=Homo sapiens]
epidermal growth factor receptor kinase substrate 8-like protein 2 [OS=Homo sapiens]
Pirin [OS=Homo sapiens]
Mitochondrial import inner membrane translocase subunit TIM50 [OS=Homo sapiens]
glutamine--tRNA ligase [OS=Homo sapiens]
SLIT-ROBO Rho GTPase-activating protein 3 [OS=Homo sapiens]
Eukaryotic translation initiation factor 3 subunit G [OS=Homo sapiens]
Neutrophil defensin 1 [OS=Homo sapiens]
Focal adhesion kinase 1 [OS=Homo sapiens]
monocarboxylate transporter 2 [OS=Homo sapiens]
SHC-transforming protein 3 [OS=Homo sapiens]
TIP41-like protein [OS=Homo sapiens]
Myosin regulatory light polypeptide 9 [OS=Homo sapiens]
NIF3-like protein 1 [OS=Homo sapiens]
Kinesin-associated protein 3 [OS=Homo sapiens]
PEST proteolytic signal-containing nuclear protein [OS=Homo sapiens]
keratin-like protein KRT222 [OS=Homo sapiens]
Brefeldin A-inhibited guanine nucleotide-exchange protein 3 [OS=Homo sapiens]
Actin-related protein 2/3 complex subunit 3 [OS=Homo sapiens]
Isoform 3 of Nuclear factor 1 A-type [OS=Homo sapiens]
Coiled-coil domain-containing protein 124 [OS=Homo sapiens]
Lysine-specific histone demethylase 1A [OS=Homo sapiens]
isoleucine--tRNA ligase, cytoplasmic [OS=Homo sapiens]
peptidyl-prolyl cis-trans isomerase FKBP8 [OS=Homo sapiens]
Ras-related protein Rab-37 [OS=Homo sapiens]
Protein TANC2 [OS=Homo sapiens]
stromal interaction molecule 1 [OS=Homo sapiens]

Ran GTPase-activating protein 1 [OS=Homo sapiens]
Metabotropic glutamate receptor 3 [OS=Homo sapiens]
NUAK family SNF1-like kinase 1 [OS=Homo sapiens]
sterol-4-alpha-carboxylate 3-dehydrogenase, decarboxylating [OS=Homo sapiens]
Beta-hexosaminidase subunit beta [OS=Homo sapiens]
Sn1-specific diacylglycerol lipase alpha [OS=Homo sapiens]
Oligoribonuclease, mitochondrial [OS=Homo sapiens]
Phospholipid-transporting ATPase IB [OS=Homo sapiens]
Ganglioside-induced differentiation-associated protein 1-like 1 [OS=Homo sapiens]
Coatomer subunit gamma-1 [OS=Homo sapiens]
NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 3 [OS=Homo sapiens]
Disintegrin and metalloproteinase domain-containing protein 10 [OS=Homo sapiens]
Diablo homolog, mitochondrial [OS=Homo sapiens]
zinc finger CCCH-type antiviral protein 1 [OS=Homo sapiens]
Leucine zipper transcription factor-like protein 1 [OS=Homo sapiens]
gamma-butyrobetaine dioxygenase [OS=Homo sapiens]
Malectin [OS=Homo sapiens]
Lysophospholipid acyltransferase 7 [OS=Homo sapiens]
regulation of nuclear pre-mRNA domain-containing protein 1B [OS=Homo sapiens]
Succinate--CoA ligase [GDP-forming] subunit beta, mitochondrial [OS=Homo sapiens]
zinc finger protein 385D [OS=Homo sapiens]
calcium and integrin-binding protein 1 [OS=Homo sapiens]
Coiled-coil domain-containing protein 51 [OS=Homo sapiens]
Map/microtubule affinity-regulating kinase 4 [OS=Homo sapiens]
SRSF protein kinase 2 [OS=Homo sapiens]
Methylmalonyl-CoA mutase, mitochondrial [OS=Homo sapiens]
RNA-binding protein Raly [OS=Homo sapiens]
Sulfatase-modifying factor 2 [OS=Homo sapiens]
40S ribosomal protein S13 [OS=Homo sapiens]
calcium/calmodulin-dependent protein kinase type IV [OS=Homo sapiens]
H(+)/Cl(-) exchange transporter 3 [OS=Homo sapiens]
DDB1- and CUL4-associated factor 7 [OS=Homo sapiens]
Synaptosomal-associated protein 29 [OS=Homo sapiens]
Myosin light chain kinase, smooth muscle [OS=Homo sapiens]
Ras-specific guanine nucleotide-releasing factor 2 [OS=Homo sapiens]
Ras-related protein R-Ras2 [OS=Homo sapiens]
Selenide, water dikinase 1 [OS=Homo sapiens]
Mitochondrial import receptor subunit TOM22 homolog [OS=Homo sapiens]
Replication protein A 14 kDa subunit [OS=Homo sapiens]
Serine/threonine-protein phosphatase 2A 56 kDa regulatory subunit beta isoform [OS=Homo sapiens]

Serum amyloid P-component [OS=Homo sapiens]
Serine/threonine-protein kinase LMTK3 [OS=Homo sapiens]
Protein RCC2 [OS=Homo sapiens]
Myosin-7B [OS=Homo sapiens]
TBC1 domain family member 17 [OS=Homo sapiens]
Nuclease-sensitive element-binding protein 1 [OS=Homo sapiens]
Host cell factor 1 [OS=Homo sapiens]
Transmembrane 9 superfamily member 4 [OS=Homo sapiens]
Dynactin subunit 3 [OS=Homo sapiens]
Tectonin beta-propeller repeat-containing protein 1 [OS=Homo sapiens]
G-rich sequence factor 1 [OS=Homo sapiens]
T-lymphoma invasion and metastasis-inducing protein 1 [OS=Homo sapiens]
Reticulocalbin-1 [OS=Homo sapiens]
Arginase-1 [OS=Homo sapiens]
Fructose-1,6-bisphosphatase 1 [OS=Homo sapiens]
tropomodulin-3 [OS=Homo sapiens]
Ubiquitin-conjugating enzyme E2 K [OS=Homo sapiens]
Histidine-rich glycoprotein [OS=Homo sapiens]
Sodium- and chloride-dependent glycine transporter 2 [OS=Homo sapiens]
DNA fragmentation factor subunit alpha [OS=Homo sapiens]
protein EFR3 homolog A [OS=Homo sapiens]
Isoform 2 of NADH dehydrogenase [ubiquinone] flavoprotein 3, mitochondrial [OS=Homo sapiens]
epidermal growth factor receptor [OS=Homo sapiens]
39S ribosomal protein L43, mitochondrial [OS=Homo sapiens]
COP9 signalosome complex subunit 3 [OS=Homo sapiens]
protein FAM98A [OS=Homo sapiens]
Sodium channel subunit beta-1 [OS=Homo sapiens]
Cullin-5 [OS=Homo sapiens]
Coiled-coil domain-containing protein 92 [OS=Homo sapiens]
Carnitine O-palmitoyltransferase 1, brain isoform [OS=Homo sapiens]
Engulfment and cell motility protein 1 [OS=Homo sapiens]
striatin [OS=Homo sapiens]
protein LYRIC [OS=Homo sapiens]
Coiled-coil domain-containing protein 22 [OS=Homo sapiens]
CAP-Gly domain-containing linker protein 3 [OS=Homo sapiens]
Cytochrome c oxidase subunit 7A2, mitochondrial [OS=Homo sapiens]
kinesin-like protein KIF3A [OS=Homo sapiens]
Myosin-7 [OS=Homo sapiens]
HD domain-containing protein 2 [OS=Homo sapiens]
N(4)-(beta-N-acetylglucosaminy)-L-asparaginase [OS=Homo sapiens]

Rab GTPase-activating protein 1 [OS=Homo sapiens]
Myosin-3 [OS=Homo sapiens]
proteasome activator complex subunit 2 [OS=Homo sapiens]
Fructose-2,6-bisphosphatase TIGAR [OS=Homo sapiens]
Aspartate beta-hydroxylase domain-containing protein 2 [OS=Homo sapiens]
Protein arginine N-methyltransferase 5 [OS=Homo sapiens]
Unconventional myosin-Ib [OS=Homo sapiens]
apolipoprotein(a) [OS=Homo sapiens]
Nuclear receptor coactivator 5 [OS=Homo sapiens]
Mitochondrial carrier homolog 1 [OS=Homo sapiens]
Rap1 GTPase-activating protein 2 [OS=Homo sapiens]
Non-syndromic hearing impairment protein 5 [OS=Homo sapiens]
porphobilinogen deaminase [OS=Homo sapiens]
mitochondrial import inner membrane translocase subunit TIM13 [OS=Homo sapiens]
Calcium-binding and coiled-coil domain-containing protein 1 [OS=Homo sapiens]
von Willebrand factor A domain-containing protein 5A [OS=Homo sapiens]
Glyceraldehyde-3-phosphate dehydrogenase, testis-specific [OS=Homo sapiens]
Dynactin subunit 5 [OS=Homo sapiens]
Mapk-regulated corepressor-interacting protein 1 [OS=Homo sapiens]
Lon protease homolog, mitochondrial [OS=Homo sapiens]
sialate O-acetyltransferase [OS=Homo sapiens]
Myosin-13 [OS=Homo sapiens]
5'-3' exoribonuclease 2 [OS=Homo sapiens]
Phosphatidylinositol 5-phosphate 4-kinase type-2 gamma [OS=Homo sapiens]
Protein FAM171A1 [OS=Homo sapiens]
Small nuclear ribonucleoprotein F [OS=Homo sapiens]
Mas-related G-protein coupled receptor member F [OS=Homo sapiens]
endoplasmic reticulum aminopeptidase 1 [OS=Homo sapiens]
WAS/WASL-interacting protein family member 2 [OS=Homo sapiens]
Adhesion G protein-coupled receptor B2 [OS=Homo sapiens]
Proteasome subunit beta type-9 [OS=Homo sapiens]
Short coiled-coil protein [OS=Homo sapiens]
60S ribosomal protein L39 [OS=Homo sapiens]
Somatostatin [OS=Homo sapiens]
Isoform 1 of Unconventional myosin-VI [OS=Homo sapiens]
Syntaxin-4 [OS=Homo sapiens]
Glutamate decarboxylase 1 [OS=Homo sapiens]
Proteasome subunit beta type-8 [OS=Homo sapiens]
LIM domain only protein 7 [OS=Homo sapiens]
39S ribosomal protein L49, mitochondrial [OS=Homo sapiens]
NADH dehydrogenase [ubiquinone] 1 alpha subcomplex assembly factor 3 [OS=Homo

sapiens]
glycylpeptide N-tetradecanoyltransferase 1 [OS=Homo sapiens]
Lys-63-specific deubiquitinase BRCC36 [OS=Homo sapiens]
G protein-coupled receptor kinase 5 [OS=Homo sapiens]
Pyridoxal phosphate homeostasis protein [OS=Homo sapiens]
BRISC complex subunit Abraxas 2 [OS=Homo sapiens]
Vacuolar protein sorting-associated protein 16 homolog [OS=Homo sapiens]
Thyroid hormone receptor-associated protein 3 [OS=Homo sapiens]
CD99 antigen-like protein 2 [OS=Homo sapiens]
Tax1-binding protein 3 [OS=Homo sapiens]
MAM domain-containing glycosylphosphatidylinositol anchor protein 1 [OS=Homo sapiens]
epsin-2 [OS=Homo sapiens]
carbonic anhydrase 3 [OS=Homo sapiens]
NADH dehydrogenase [ubiquinone] 1 alpha subcomplex assembly factor 8 [OS=Homo sapiens]
Anillin [OS=Homo sapiens]
ADP-ribosylation factor GTPase-activating protein 2 [OS=Homo sapiens]
Amyloid-like protein 2 [OS=Homo sapiens]
Transmembrane emp24 domain-containing protein 7 [OS=Homo sapiens]
Calpastatin [OS=Homo sapiens]
MKL/myocardin-like protein 2 [OS=Homo sapiens]
Beta-2-syntrophin [OS=Homo sapiens]
Transcription elongation regulator 1 [OS=Homo sapiens]
SUN domain-containing protein 2 [OS=Homo sapiens]
Protein kinase C-binding protein NELL2 [OS=Homo sapiens]
Ubiquitin-like protein 4A [OS=Homo sapiens]
Ethylmalonyl-CoA decarboxylase [OS=Homo sapiens]
Enhancer of rudimentary homolog [OS=Homo sapiens]
collagen alpha-3(IV) chain [OS=Homo sapiens]
Butyrophilin subfamily 3 member A1 [OS=Homo sapiens]
Polyribonucleotide nucleotidyltransferase 1, mitochondrial [OS=Homo sapiens]
Voltage-dependent calcium channel gamma-8 subunit [OS=Homo sapiens]
Jupiter microtubule associated homolog 2 [OS=Homo sapiens]
guanylate cyclase soluble subunit beta-1 [OS=Homo sapiens]
Long-chain-fatty-acid--CoA ligase 1 [OS=Homo sapiens]
DENN domain-containing protein 4B [OS=Homo sapiens]
Pre-mRNA-processing factor 6 [OS=Homo sapiens]
Pseudouridine-5'-phosphatase [OS=Homo sapiens]
Diphosphomevalonate decarboxylase [OS=Homo sapiens]
amyloid-beta A4 precursor protein-binding family A member 1 [OS=Homo sapiens]
Ferredoxin-2, mitochondrial [OS=Homo sapiens]

Cell division cycle and apoptosis regulator protein 1 [OS=Homo sapiens]
Arf-GAP with dual PH domain-containing protein 1 [OS=Homo sapiens]
Calcium-regulated heat-stable protein 1 [OS=Homo sapiens]
Probable E3 ubiquitin-protein ligase HECTD4 [OS=Homo sapiens]
26S proteasome non-ATPase regulatory subunit 6 [OS=Homo sapiens]
Protein argonaute-3 [OS=Homo sapiens]
ADP-ribosylation factor-like protein 3 [OS=Homo sapiens]
protein FAM126B [OS=Homo sapiens]
uncharacterized protein C10orf35 [OS=Homo sapiens]
UPF0598 protein C8orf82 [OS=Homo sapiens]
LIM domain and actin-binding protein 1 [OS=Homo sapiens]
splicing factor 3B subunit 1 [OS=Homo sapiens]
Stromal membrane-associated protein 2 [OS=Homo sapiens]
Spermine synthase [OS=Homo sapiens]
cadherin EGF LAG seven-pass G-type receptor 2 [OS=Homo sapiens]
Protein transport protein Sec31A [OS=Homo sapiens]
C-Jun-amino-terminal kinase-interacting protein 3 [OS=Homo sapiens]
Voltage-dependent calcium channel gamma-2 subunit [OS=Homo sapiens]
BTB/POZ domain-containing protein KCTD2 [OS=Homo sapiens]
Serine/threonine-protein kinase WNK1 [OS=Homo sapiens]
U4/U6 small nuclear ribonucleoprotein Prp31 [OS=Homo sapiens]
Aldehyde dehydrogenase X, mitochondrial [OS=Homo sapiens]
Charged multivesicular body protein 4a [OS=Homo sapiens]
coiled-coil domain-containing protein 58 [OS=Homo sapiens]
Acyl-protein thioesterase 1 [OS=Homo sapiens]
synaptic functional regulator FMR1 [OS=Homo sapiens]
integrin alpha-7 [OS=Homo sapiens]
Electron transfer flavoprotein-ubiquinone oxidoreductase, mitochondrial [OS=Homo sapiens]
Glycine cleavage system H protein, mitochondrial [OS=Homo sapiens]
Metaxin-1 [OS=Homo sapiens]
Tubulin-specific chaperone C [OS=Homo sapiens]
Complement C1q subcomponent subunit B [OS=Homo sapiens]
Synaptogyrin-1 [OS=Homo sapiens]
Bifunctional coenzyme A synthase [OS=Homo sapiens]
Immunoglobulin J chain [OS=Homo sapiens]
Metallothionein-1F [OS=Homo sapiens]
Synaptoporin [OS=Homo sapiens]
39S ribosomal protein L23, mitochondrial [OS=Homo sapiens]
leucine carboxyl methyltransferase 1 [OS=Homo sapiens]
monoglyceride lipase [OS=Homo sapiens]

E3 ubiquitin-protein ligase NEDD4-like [OS=Homo sapiens]
G protein-regulated inducer of neurite outgrowth 3 [OS=Homo sapiens]
Gamma-aminobutyric acid receptor subunit alpha-6 [OS=Homo sapiens]
Phosphoinositide 3-kinase regulatory subunit 4 [OS=Homo sapiens]
Eukaryotic translation initiation factor 4E [OS=Homo sapiens]
N-acetylglucosamine-6-sulfatase [OS=Homo sapiens]
Peroxisomal acyl-coenzyme A oxidase 1 [OS=Homo sapiens]
Phospholipid scramblase 4 [OS=Homo sapiens]
Acetyl-CoA carboxylase 1 [OS=Homo sapiens]
Sorting nexin-18 [OS=Homo sapiens]
EGF-containing fibulin-like extracellular matrix protein 1 [OS=Homo sapiens]
Phospholemman [OS=Homo sapiens]
ataxin-2-like protein [OS=Homo sapiens]
COP9 signalosome complex subunit 5 [OS=Homo sapiens]
Golgin subfamily A member 3 [OS=Homo sapiens]
Short-chain specific acyl-CoA dehydrogenase, mitochondrial [OS=Homo sapiens]
WW domain-containing oxidoreductase [OS=Homo sapiens]
serrate RNA effector molecule homolog [OS=Homo sapiens]
mRNA export factor [OS=Homo sapiens]
Caseinolytic peptidase B protein homolog [OS=Homo sapiens]
phosphoserine phosphatase [OS=Homo sapiens]
MAGUK p55 subfamily member 6 [OS=Homo sapiens]
Heterogeneous nuclear ribonucleoprotein U-like protein 1 [OS=Homo sapiens]
Protein FAM49A [OS=Homo sapiens]
thymidine phosphorylase [OS=Homo sapiens]
serine/arginine-rich splicing factor 11 [OS=Homo sapiens]
Golgin subfamily B member 1 [OS=Homo sapiens]
Microtubule cross-linking factor 1 [OS=Homo sapiens]
SPARC-related modular calcium-binding protein 1 [OS=Homo sapiens]
Actin-like protein 6B [OS=Homo sapiens]
serine palmitoyltransferase 1 [OS=Homo sapiens]
Zinc finger C2HC domain-containing protein 1A [OS=Homo sapiens]
Phosphatidylinositol 3,4,5-trisphosphate-dependent Rac exchanger 1 protein [OS=Homo sapiens]
39S ribosomal protein L10, mitochondrial [OS=Homo sapiens]
Protein enabled homolog [OS=Homo sapiens]
SWI/SNF-related matrix-associated actin-dependent regulator of chromatin subfamily E member 1 [OS=Homo sapiens]
Probable threonine--tRNA ligase 2, cytoplasmic [OS=Homo sapiens]
Cadherin-20 [OS=Homo sapiens]
39S ribosomal protein L53, mitochondrial [OS=Homo sapiens]
1-acyl-sn-glycerol-3-phosphate acyltransferase epsilon [OS=Homo sapiens]

WD repeat-containing protein 20 [OS=Homo sapiens]
Carboxymethylenebutenolidase homolog [OS=Homo sapiens]
E3 ubiquitin-protein ligase Itchy homolog [OS=Homo sapiens]
U6 snRNA-associated Sm-like protein LSm3 [OS=Homo sapiens]
Phospholipid phosphatase 3 [OS=Homo sapiens]
splicing factor 3A subunit 1 [OS=Homo sapiens]
Kelch repeat and BTB domain-containing protein 12 [OS=Homo sapiens]
26S proteasome non-ATPase regulatory subunit 5 [OS=Homo sapiens]
DNA-directed RNA polymerase II subunit RPB3 [OS=Homo sapiens]
charged multivesicular body protein 2a [OS=Homo sapiens]
Basic leucine zipper and W2 domain-containing protein 1 [OS=Homo sapiens]
Zinc transporter SLC39A7 [OS=Homo sapiens]
Cytospin-B [OS=Homo sapiens]
[Pyruvate dehydrogenase (acetyl-transferring)] kinase isozyme 3, mitochondrial [OS=Homo sapiens]
Eukaryotic translation initiation factor 1A, X-chromosomal [OS=Homo sapiens]
SNARE-associated protein Snapin [OS=Homo sapiens]
Actin-related protein 2/3 complex subunit 5 [OS=Homo sapiens]
Erythrocyte membrane protein band 4.2 [OS=Homo sapiens]
ADP-ribosylation factor-binding protein GGA1 [OS=Homo sapiens]
Rootletin [OS=Homo sapiens]
stearoyl-CoA desaturase 5 [OS=Homo sapiens]
rho GTPase-activating protein 21 [OS=Homo sapiens]
Mannosyl-oligosaccharide glucosidase [OS=Homo sapiens]
Transmembrane protein 245 [OS=Homo sapiens]
Cysteine-rich with EGF-like domain protein 1 [OS=Homo sapiens]
GTPase-activating protein and VPS9 domain-containing protein 1 [OS=Homo sapiens]
von Willebrand factor A domain-containing protein 7 [OS=Homo sapiens]
Splicing factor, arginine/serine-rich 19 [OS=Homo sapiens]
Importin subunit alpha-4 [OS=Homo sapiens]
Chromatin target of PRMT1 protein [OS=Homo sapiens]
Pleckstrin homology domain-containing family A member 6 [OS=Homo sapiens]
Lactotransferrin [OS=Homo sapiens]
TSC22 domain family protein 1 [OS=Homo sapiens]
FACT complex subunit SPT16 [OS=Homo sapiens]
aldo-keto reductase family 1 member C1 [OS=Homo sapiens]
Keratin, type I cytoskeletal 10 [OS=Homo sapiens]
Mitotic checkpoint protein BUB3 [OS=Homo sapiens]
Prostaglandin reductase 1 [OS=Homo sapiens]
SNW domain-containing protein 1 [OS=Homo sapiens]
Complex III assembly factor LYRM7 [OS=Homo sapiens]

HIV Tat-specific factor 1 [OS=Homo sapiens]
Protein ERGIC-53 [OS=Homo sapiens]
Mannose-1-phosphate guanyltransferase alpha [OS=Homo sapiens]
Dual specificity mitogen-activated protein kinase kinase 4 [OS=Homo sapiens]
Spartin [OS=Homo sapiens]
COMM domain-containing protein 3 [OS=Homo sapiens]
Isoform 1 of Nuclear factor 1 C-type [OS=Homo sapiens]
55 kDa erythrocyte membrane protein [OS=Homo sapiens]
WAS/WASL-interacting protein family member 3 [OS=Homo sapiens]
Guanine nucleotide-binding protein G(I)/G(S)/G(O) subunit gamma-10 [OS=Homo sapiens]
adhesion G protein-coupled receptor B1 [OS=Homo sapiens]
ADSEVERIN [OS=Homo sapiens]
Isoform Long of Ubiquitin recognition factor in ER-associated degradation protein 1 [OS=Homo sapiens]
Serine/threonine-protein kinase WNK2 [OS=Homo sapiens]
apolipoprotein L2 [OS=Homo sapiens]
T-complex protein 11-like protein 1 [OS=Homo sapiens]
Ubiquitin carboxyl-terminal hydrolase 10 [OS=Homo sapiens]
tumor protein D53 [OS=Homo sapiens]
Vacuolar protein sorting-associated protein VTA1 homolog [OS=Homo sapiens]
Uncharacterized protein KIAA1671 [OS=Homo sapiens]
39S ribosomal protein L14, mitochondrial [OS=Homo sapiens]
Inactive hydroxysteroid dehydrogenase-like protein 1 [OS=Homo sapiens]
Calumenin [OS=Homo sapiens]
Calcyclin-binding protein [OS=Homo sapiens]
NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 6 [OS=Homo sapiens]
Membrane magnesium transporter 1 [OS=Homo sapiens]
cAMP-regulated phosphoprotein 19 [OS=Homo sapiens]
Protein DDI1 homolog 2 [OS=Homo sapiens]
Protein Red [OS=Homo sapiens]
Neurofibromin [OS=Homo sapiens]
Serine/threonine-protein kinase MRCK alpha [OS=Homo sapiens]
selenocysteine-specific elongation factor [OS=Homo sapiens]
Homeodomain-only protein [OS=Homo sapiens]
Ectonucleoside triphosphate diphosphohydrolase 3 [OS=Homo sapiens]
60S ribosomal protein L36 [OS=Homo sapiens]
Transmembrane protein 205 [OS=Homo sapiens]
40S ribosomal protein S24 [OS=Homo sapiens]
HCLS1-associated protein X-1 [OS=Homo sapiens]
Latexin [OS=Homo sapiens]
Splicing factor 3b subunit 4 [OS=Homo sapiens]

Retinol dehydrogenase 11 [OS=Homo sapiens]
protein transport protein Sec23A [OS=Homo sapiens]
E3 ubiquitin-protein ligase KCMF1 [OS=Homo sapiens]
Serine/threonine-protein kinase MARK2 [OS=Homo sapiens]
Voltage-dependent calcium channel beta subunit-associated regulatory protein [OS=Homo sapiens]
CD99 antigen [OS=Homo sapiens]
Protein PAXX [OS=Homo sapiens]
histone deacetylase 11 [OS=Homo sapiens]
Nuclear inhibitor of protein phosphatase 1 [OS=Homo sapiens]
thioredoxin reductase 2, mitochondrial [OS=Homo sapiens]
UBX domain-containing protein 1 [OS=Homo sapiens]
collagen alpha-1(XXV) chain [OS=Homo sapiens]
C2 calcium-dependent domain-containing protein 4C [OS=Homo sapiens]
Immunoglobulin heavy variable 3-30 [OS=Homo sapiens]
Eukaryotic peptide chain release factor GTP-binding subunit ERF3A [OS=Homo sapiens]
Cyclin-dependent kinase 18 [OS=Homo sapiens]
Vacuolar protein sorting-associated protein 45 [OS=Homo sapiens]
COP9 signalosome complex subunit 6 [OS=Homo sapiens]
Serine/threonine-protein phosphatase 6 regulatory subunit 1 [OS=Homo sapiens]
Ubiquitin domain-containing protein 2 [OS=Homo sapiens]
Golgi-specific brefeldin A-resistance guanine nucleotide exchange factor 1 [OS=Homo sapiens]
Prostaglandin E synthase 3 [OS=Homo sapiens]
Chromodomain-helicase-DNA-binding protein 4 [OS=Homo sapiens]
Jupiter microtubule associated homolog 1 [OS=Homo sapiens]
Nitric oxide synthase, brain [OS=Homo sapiens]
Thioredoxin-related transmembrane protein 2 [OS=Homo sapiens]
Cold shock domain-containing protein C2 [OS=Homo sapiens]
Zinc transporter 3 [OS=Homo sapiens]
Engulfment and cell motility protein 2 [OS=Homo sapiens]
Protein ABHD16A [OS=Homo sapiens]
WD40 repeat-containing protein SMU1 [OS=Homo sapiens]
Vacuolar protein sorting-associated protein 26A [OS=Homo sapiens]
PDZ domain-containing protein GIPC1 [OS=Homo sapiens]
Alanine aminotransferase 1 [OS=Homo sapiens]
Leucine-rich repeat and fibronectin type-III domain-containing protein 5 [OS=Homo sapiens]
Dynactin subunit 6 [OS=Homo sapiens]
Catenin alpha-3 [OS=Homo sapiens]
Ras GTPase-activating protein 3 [OS=Homo sapiens]

D-2-hydroxyglutarate dehydrogenase, mitochondrial [OS=Homo sapiens]
Mitochondrial Rho GTPase 1 [OS=Homo sapiens]
CCR4-NOT transcription complex subunit 1 [OS=Homo sapiens]
39S ribosomal protein L11, mitochondrial [OS=Homo sapiens]
La-related protein 1 [OS=Homo sapiens]
signal recognition particle receptor subunit beta [OS=Homo sapiens]
XK-related protein 4 [OS=Homo sapiens]
TLD domain-containing protein 1 [OS=Homo sapiens]
protein NipSnap homolog 3A [OS=Homo sapiens]
Polypyrimidine tract-binding protein 1 [OS=Homo sapiens]
guanidinoacetate N-methyltransferase [OS=Homo sapiens]
Protein C10 [OS=Homo sapiens]
Periaxin [OS=Homo sapiens]
copper chaperone for superoxide dismutase [OS=Homo sapiens]
Replication protein A 32 kDa subunit [OS=Homo sapiens]
Kynurenine--oxoglutarate transaminase 3 [OS=Homo sapiens]
Importin subunit alpha-3 [OS=Homo sapiens]
acid sphingomyelinase-like phosphodiesterase 3B [OS=Homo sapiens]
Serine incorporator 1 [OS=Homo sapiens]
Isoform 4 of Leucine-rich repeat flightless-interacting protein 1 [OS=Homo sapiens]
WASH complex subunit 4 [OS=Homo sapiens]
chloride intracellular channel protein 1 [OS=Homo sapiens]
SWI/SNF complex subunit SMARCC2 [OS=Homo sapiens]
Protein Hook homolog 1 [OS=Homo sapiens]
molybdopterin synthase catalytic subunit [OS=Homo sapiens]
Trypsin-1 [OS=Homo sapiens]
Centromere protein P [OS=Homo sapiens]
Deubiquitinating protein VCIP135 [OS=Homo sapiens]
transmembrane protein 265 [OS=Homo sapiens]
Kallikrein-6 [OS=Homo sapiens]
Vesicular integral-membrane protein VIP36 [OS=Homo sapiens]
iduronate 2-sulfatase [OS=Homo sapiens]
GTP-binding protein Di-Ras2 [OS=Homo sapiens]
Transforming growth factor-beta-induced protein ig-h3 [OS=Homo sapiens]
Prostaglandin reductase 2 [OS=Homo sapiens]
E3 ubiquitin-protein ligase Trim36 [OS=Homo sapiens]
Cytochrome c oxidase subunit 7A-related protein, mitochondrial [OS=Homo sapiens]
Potassium voltage-gated channel subfamily C member 3 [OS=Homo sapiens]
Polypeptide N-acetylgalactosaminyltransferase 16 [OS=Homo sapiens]
RalA-binding protein 1 [OS=Homo sapiens]
Fibroblast growth factor receptor 3 [OS=Homo sapiens]

CDK5 regulatory subunit-associated protein 2 [OS=Homo sapiens]
Gamma-aminobutyric acid receptor subunit alpha-3 [OS=Homo sapiens]
Immunoglobulin heavy variable 1-2 [OS=Homo sapiens]
Membrane-associated guanylate kinase, WW and PDZ domain-containing protein 3 [OS=Homo sapiens]
Cell cycle control protein 50B [OS=Homo sapiens]
Myocyte-specific enhancer factor 2C [OS=Homo sapiens]
Galactocerebrosidase [OS=Homo sapiens]
Small nuclear ribonucleoprotein G [OS=Homo sapiens]
Protein sel-1 homolog 1 [OS=Homo sapiens]
DnaJ homolog subfamily B member 11 [OS=Homo sapiens]
Serine/threonine-protein kinase OSR1 [OS=Homo sapiens]
COP9 signalosome complex subunit 7b [OS=Homo sapiens]
Ubiquitin carboxyl-terminal hydrolase isozyme L3 [OS=Homo sapiens]
ATP-binding cassette sub-family E member 1 [OS=Homo sapiens]
protein MAL2 [OS=Homo sapiens]
Carboxypeptidase Q [OS=Homo sapiens]
6-phosphofructo-2-kinase/fructose-2,6-bisphosphatase 2 [OS=Homo sapiens]
Cytohesin-2 [OS=Homo sapiens]
Probable global transcription activator SNF2L2 [OS=Homo sapiens]
28S ribosomal protein S34, mitochondrial [OS=Homo sapiens]
Cytochrome c oxidase subunit 6A1, mitochondrial [OS=Homo sapiens]
Tetratricopeptide repeat protein 9A [OS=Homo sapiens]
aminoacyl tRNA synthase complex-interacting multifunctional protein 1 [OS=Homo sapiens]
Exportin-2 [OS=Homo sapiens]
Mitochondrial import inner membrane translocase subunit TIM22 [OS=Homo sapiens]
Delta(14)-sterol reductase [OS=Homo sapiens]
protein LSM14 homolog A [OS=Homo sapiens]
39S ribosomal protein L16, mitochondrial [OS=Homo sapiens]
3-phosphoinositide-dependent protein kinase 1 [OS=Homo sapiens]
THAP domain-containing protein 4 [OS=Homo sapiens]
Transcription elongation factor Spt5 [OS=Homo sapiens]
alpha-methylacyl-CoA racemase [OS=Homo sapiens]
centrin-2 [OS=Homo sapiens]
NudC domain-containing protein 3 [OS=Homo sapiens]
Ankyrin repeat and BTB/POZ domain-containing protein BTBD11 [OS=Homo sapiens]
Small integral membrane protein 20 [OS=Homo sapiens]
ATP-binding cassette sub-family A member 2 [OS=Homo sapiens]
Mitochondrial import inner membrane translocase subunit TIM16 [OS=Homo sapiens]
Phospholipase D1 [OS=Homo sapiens]

insulin receptor [OS=Homo sapiens]
Lysosomal alpha-mannosidase [OS=Homo sapiens]
Probable aminopeptidase NPEPL1 [OS=Homo sapiens]
CUB and sushi domain-containing protein 2 [OS=Homo sapiens]
splicing factor 3a subunit 3 [OS=Homo sapiens]
programmed cell death protein 10 [OS=Homo sapiens]
DCN1-like protein 1 [OS=Homo sapiens]
Keratin, type I cuticular Ha8 [OS=Homo sapiens]
Oxysterol-binding protein-related protein 6 [OS=Homo sapiens]
LysM and putative peptidoglycan-binding domain-containing protein 2 [OS=Homo sapiens]
NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 11 [OS=Homo sapiens]
V-type proton ATPase subunit S1 [OS=Homo sapiens]
alpha-2-macroglobulin receptor-associated protein [OS=Homo sapiens]
CD5 antigen-like [OS=Homo sapiens]
eukaryotic translation initiation factor 3 subunit L [OS=Homo sapiens]
Glycerophosphocholine phosphodiesterase GPCPD1 [OS=Homo sapiens]
Noelin-2 [OS=Homo sapiens]
39S ribosomal protein L2, mitochondrial [OS=Homo sapiens]
protein EFR3 homolog B [OS=Homo sapiens]
Collagen alpha-2(V) chain [OS=Homo sapiens]
Kunitz-type protease inhibitor 2 [OS=Homo sapiens]
Protein FAM107B [OS=Homo sapiens]
exocyst complex component 1 [OS=Homo sapiens]
UPF0606 protein KIAA1549L [OS=Homo sapiens]
Protein THEM6 [OS=Homo sapiens]
ER membrane protein complex subunit 7 [OS=Homo sapiens]
Rho GTPase-activating protein 39 [OS=Homo sapiens]
Vacuolar protein sorting-associated protein 11 homolog [OS=Homo sapiens]
Transmembrane protein 263 [OS=Homo sapiens]
Acetylcholinesterase [OS=Homo sapiens]
glycogen [starch] synthase, muscle [OS=Homo sapiens]
NAC-alpha domain-containing protein 1 [OS=Homo sapiens]
metabotropic glutamate receptor 6 [OS=Homo sapiens]
AH receptor-interacting protein [OS=Homo sapiens]
Sulfotransferase 4A1 [OS=Homo sapiens]
huntingtin [OS=Homo sapiens]
Ensconsin [OS=Homo sapiens]
Protein NipSnap homolog 3B [OS=Homo sapiens]
Mitochondrial intermembrane space import and assembly protein 40 [OS=Homo sapiens]

rho GTPase-activating protein 32 [OS=Homo sapiens]
NudC domain-containing protein 2 [OS=Homo sapiens]
Frataxin, mitochondrial [OS=Homo sapiens]
WD repeat-containing protein 54 [OS=Homo sapiens]
Collagen alpha-1(XII) chain [OS=Homo sapiens]
Cytochrome c oxidase subunit NDUFA4 [OS=Homo sapiens]
Protein kinase C and casein kinase substrate in neurons protein 3 [OS=Homo sapiens]
EMILIN-1 [OS=Homo sapiens]
39S ribosomal protein L38, mitochondrial [OS=Homo sapiens]
Isoform 2 of Potassium voltage-gated channel subfamily C member 1 [OS=Homo sapiens]
2-oxoisovalerate dehydrogenase subunit beta, mitochondrial [OS=Homo sapiens]
tenascin-X [OS=Homo sapiens]
probable cysteine--tRNA ligase, mitochondrial [OS=Homo sapiens]
C2 domain-containing protein 5 [OS=Homo sapiens]
WD repeat-containing protein 82 [OS=Homo sapiens]
NEDD8-activating enzyme E1 regulatory subunit [OS=Homo sapiens]
Vacuolar protein sorting-associated protein 33A [OS=Homo sapiens]
Tripartite motif-containing protein 72 [OS=Homo sapiens]
Rho guanine nucleotide exchange factor 12 [OS=Homo sapiens]
Ankyrin repeat and MYND domain-containing protein 2 [OS=Homo sapiens]
sentrin-specific protease 8 [OS=Homo sapiens]
Protein SCO1 homolog, mitochondrial [OS=Homo sapiens]
Fatty-acid amide hydrolase 1 [OS=Homo sapiens]
NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 11, mitochondrial [OS=Homo sapiens]
Exosome complex component MTR3 [OS=Homo sapiens]
Dermatopontin [OS=Homo sapiens]
Leucine-rich repeat-containing protein 7 [OS=Homo sapiens]
NEDD8-activating enzyme E1 catalytic subunit [OS=Homo sapiens]
Uncharacterized protein C1orf198 [OS=Homo sapiens]
Serpin H1 [OS=Homo sapiens]
AP-3 complex subunit beta-1 [OS=Homo sapiens]
Vesicular glutamate transporter 2 [OS=Homo sapiens]
DDRGK domain-containing protein 1 [OS=Homo sapiens]
PDZ and LIM domain protein 1 [OS=Homo sapiens]
Armadillo repeat-containing protein 8 [OS=Homo sapiens]
Protein phosphatase 1 regulatory subunit 1A [OS=Homo sapiens]
ras GTPase-activating protein nGAP [OS=Homo sapiens]
Membrane-associated phosphatidylinositol transfer protein 3 [OS=Homo sapiens]
DnaJ homolog subfamily A member 4 [OS=Homo sapiens]
Glutamate receptor ionotropic, NMDA 2B [OS=Homo sapiens]

Diacylglycerol kinase iota [OS=Homo sapiens]
Uncharacterized protein C18orf25 [OS=Homo sapiens]
Myosin phosphatase Rho-interacting protein [OS=Homo sapiens]
Leucine-rich repeat and fibronectin type-III domain-containing protein 2 [OS=Homo sapiens]
Agmatinase, mitochondrial [OS=Homo sapiens]
SH2 domain-containing protein 5 [OS=Homo sapiens]
Phosphofurin acidic cluster sorting protein 2 [OS=Homo sapiens]
Atypical kinase COQ8A, mitochondrial [OS=Homo sapiens]
opioid growth factor receptor [OS=Homo sapiens]
Protein phosphatase 1 regulatory subunit 29 [OS=Homo sapiens]
Adhesion G protein-coupled receptor B3 [OS=Homo sapiens]
Rho guanine nucleotide exchange factor 7 [OS=Homo sapiens]
Fatty aldehyde dehydrogenase [OS=Homo sapiens]
Plexin domain-containing protein 2 [OS=Homo sapiens]
Eukaryotic translation initiation factor 3 subunit J [OS=Homo sapiens]
Serine/threonine-protein kinase MARK1 [OS=Homo sapiens]
Regulator of G-protein signaling 12 [OS=Homo sapiens]
G-protein coupled receptor family C group 5 member B [OS=Homo sapiens]
Neuroglobin [OS=Homo sapiens]
Protein AMBP [OS=Homo sapiens]
60S ribosomal protein L36a-like [OS=Homo sapiens]
Abelson tyrosine-protein kinase 2 [OS=Homo sapiens]
Protein S100-A10 [OS=Homo sapiens]
Membrane protein MLC1 [OS=Homo sapiens]
Putative peptidyl-tRNA hydrolase PTRHD1 [OS=Homo sapiens]
DnaJ homolog subfamily C member 7 [OS=Homo sapiens]
EARP-interacting protein [OS=Homo sapiens]
Mitochondrial amidoxime reducing component 2 [OS=Homo sapiens]
Potassium/sodium hyperpolarization-activated cyclic nucleotide-gated channel 1 [OS=Homo sapiens]
putative glutathione hydrolase light chain 3 [OS=Homo sapiens]
caveolae-associated protein 1 [OS=Homo sapiens]
G protein-coupled receptor kinase 4 [OS=Homo sapiens]
Calcium-binding protein 39 [OS=Homo sapiens]
Vacuolar protein sorting-associated protein 4A [OS=Homo sapiens]
Coxsackievirus and adenovirus receptor [OS=Homo sapiens]
density-regulated protein [OS=Homo sapiens]
myelin-associated oligodendrocyte basic protein [OS=Homo sapiens]
GH3 domain-containing protein [OS=Homo sapiens]
Abscission/NoCut checkpoint regulator [OS=Homo sapiens]
Vacuolar protein sorting-associated protein 4B [OS=Homo sapiens]

Transferrin receptor protein 1 [OS=Homo sapiens]
Attractin [OS=Homo sapiens]
Multiple myeloma tumor-associated protein 2 [OS=Homo sapiens]
Carbamoyl-phosphate synthase [ammonia], mitochondrial [OS=Homo sapiens]
Protein O-linked-mannose beta-1,4-N-acetylglucosaminyltransferase 2 [OS=Homo sapiens]
WD repeat domain phosphoinositide-interacting protein 3 [OS=Homo sapiens]
Butyrophilin subfamily 2 member A1 [OS=Homo sapiens]
NAD-dependent protein deacetylase sirtuin-3, mitochondrial [OS=Homo sapiens]
1-phosphatidylinositol 4,5-bisphosphate phosphodiesterase beta-3 [OS=Homo sapiens]
ATP-dependent RNA helicase SUPV3L1, mitochondrial [OS=Homo sapiens]
junctophilin-1 [OS=Homo sapiens]
Rho GTPase-activating protein 35 [OS=Homo sapiens]
protein farnesyltransferase subunit beta [OS=Homo sapiens]
IgGfc-binding protein [OS=Homo sapiens]
calcineurin B homologous protein 3 [OS=Homo sapiens]
Charged multivesicular body protein 5 [OS=Homo sapiens]
Immunoglobulin superfamily containing leucine-rich repeat protein [OS=Homo sapiens]
Mitochondrial uncoupling protein 4 [OS=Homo sapiens]
Synaptotagmin-3 [OS=Homo sapiens]
NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 1 [OS=Homo sapiens]
Lysine--tRNA ligase [OS=Homo sapiens]
60 kDa SS-A/Ro ribonucleoprotein [OS=Homo sapiens]
rRNA/tRNA 2'-O-methyltransferase fibrillar-like protein 1 [OS=Homo sapiens]
Protein prune homolog 2 [OS=Homo sapiens]
Alpha-tocopherol transfer protein-like [OS=Homo sapiens]
Coiled-coil and C2 domain-containing protein 1A [OS=Homo sapiens]
Lysosome-associated membrane glycoprotein 2 [OS=Homo sapiens]
rab GTPase-binding effector protein 2 [OS=Homo sapiens]
enhancer of polycomb homolog 2 [OS=Homo sapiens]
Galactosylgalactosylxylosylprotein 3-beta-glucuronosyltransferase 3 [OS=Homo sapiens]
Pleiotropic regulator 1 [OS=Homo sapiens]
Stathmin-3 [OS=Homo sapiens]
Ninjurin-2 [OS=Homo sapiens]
Scavenger receptor cysteine-rich type 1 protein M130 [OS=Homo sapiens]
39S ribosomal protein L39, mitochondrial [OS=Homo sapiens]
Rabenosyn-5 [OS=Homo sapiens]
casein kinase II subunit alpha' [OS=Homo sapiens]
LIM and calponin homology domains-containing protein 1 [OS=Homo sapiens]
Acidic leucine-rich nuclear phosphoprotein 32 family member B [OS=Homo sapiens]

Methionine-R-sulfoxide reductase B2, mitochondrial [OS=Homo sapiens]
zinc transporter 9 [OS=Homo sapiens]
Endoplasmic reticulum-Golgi intermediate compartment protein 1 [OS=Homo sapiens]
Monocarboxylate transporter 8 [OS=Homo sapiens]
aminoacyl tRNA synthase complex-interacting multifunctional protein 2 [OS=Homo sapiens]
Contactin-associated protein-like 4 [OS=Homo sapiens]
UPF0449 protein C19orf25 [OS=Homo sapiens]
Catechol O-methyltransferase domain-containing protein 1 [OS=Homo sapiens]
Chitinase-3-like protein 1 [OS=Homo sapiens]
Tripartite motif-containing protein 10 [OS=Homo sapiens]
Rho GTPase-activating protein 26 [OS=Homo sapiens]
CD82 antigen [OS=Homo sapiens]
long-chain-fatty-acid--CoA ligase 3 [OS=Homo sapiens]
NEDD4-binding protein 2-like 1 [OS=Homo sapiens]
WASH complex subunit 2C [OS=Homo sapiens]
Clustered mitochondria protein homolog [OS=Homo sapiens]
Semaphorin-7A [OS=Homo sapiens]
ER membrane protein complex subunit 8 [OS=Homo sapiens]
Uncharacterized protein C19orf43 [OS=Homo sapiens]
Transmembrane protein 120A [OS=Homo sapiens]
NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 2, mitochondrial [OS=Homo sapiens]
Dynein light chain Tctex-type 3 [OS=Homo sapiens]
multidrug resistance protein 1 [OS=Homo sapiens]
secernin-3 [OS=Homo sapiens]
Protein PRRC2A [OS=Homo sapiens]
Chromogranin-A [OS=Homo sapiens]
CLK4-associating serine/arginine rich protein [OS=Homo sapiens]
Neuronal tyrosine-phosphorylated phosphoinositide-3-kinase adapter 2 [OS=Homo sapiens]
sulfiredoxin-1 [OS=Homo sapiens]
Nucleoplasmin-2 [OS=Homo sapiens]
NODAL modulator 2 [OS=Homo sapiens]
Protein dispatched homolog 2 [OS=Homo sapiens]
Integrin beta-2 [OS=Homo sapiens]
fas-associated factor 1 [OS=Homo sapiens]
Eukaryotic translation initiation factor 2A [OS=Homo sapiens]
Dolichol-phosphate mannosyltransferase subunit 3 [OS=Homo sapiens]
Enoyl-CoA delta isomerase 2, mitochondrial [OS=Homo sapiens]
Synaptic vesicle 2-related protein [OS=Homo sapiens]
Fibroblast growth factor 12 [OS=Homo sapiens]

Leucine-rich repeat LGI family member 4 [OS=Homo sapiens]
39S ribosomal protein L24, mitochondrial [OS=Homo sapiens]
BMP/retinoic acid-inducible neural-specific protein 2 [OS=Homo sapiens]
Protein numb homolog [OS=Homo sapiens]
Collagen alpha-1(XIV) chain [OS=Homo sapiens]
Sodium/hydrogen exchanger 6 [OS=Homo sapiens]
Nucleoporin NUP53 [OS=Homo sapiens]
Prostamide/prostaglandin F synthase [OS=Homo sapiens]
Leucine-rich repeat-containing protein 4C [OS=Homo sapiens]
GPI transamidase component PIG-T [OS=Homo sapiens]
cx9C motif-containing protein 4 [OS=Homo sapiens]
Inosine triphosphate pyrophosphatase [OS=Homo sapiens]
Oxysterol-binding protein 2 [OS=Homo sapiens]
NEDD8-conjugating enzyme UBE2F [OS=Homo sapiens]
selenoprotein F [OS=Homo sapiens]
1,4-alpha-glucan-branching enzyme [OS=Homo sapiens]
Leucine-rich repeat and fibronectin type-III domain-containing protein 4 [OS=Homo sapiens]
Rho guanine nucleotide exchange factor 33 [OS=Homo sapiens]
serine/arginine-rich splicing factor 8 [OS=Homo sapiens]
EH domain-containing protein 4 [OS=Homo sapiens]
Cytochrome b reductase 1 [OS=Homo sapiens]
39S ribosomal protein S30, mitochondrial [OS=Homo sapiens]
Mediator of DNA damage checkpoint protein 1 [OS=Homo sapiens]
NT-3 growth factor receptor [OS=Homo sapiens]
40S ribosomal protein S26 [OS=Homo sapiens]
E3 ubiquitin-protein ligase TRIM32 [OS=Homo sapiens]
N-acetylgalactosamine-6-sulfatase [OS=Homo sapiens]
Nestin [OS=Homo sapiens]
Testican-1 [OS=Homo sapiens]
Exportin-1 [OS=Homo sapiens]
Phosphatidylinositol 3-kinase catalytic subunit type 3 [OS=Homo sapiens]
Cytoplasmic phosphatidylinositol transfer protein 1 [OS=Homo sapiens]
Thiamine-triphosphatase [OS=Homo sapiens]
importin subunit alpha-6 [OS=Homo sapiens]
Amyloid beta A4 precursor protein-binding family B member 1-interacting protein [OS=Homo sapiens]
Trafficking protein particle complex subunit 3 [OS=Homo sapiens]
Thioredoxin domain-containing protein 12 [OS=Homo sapiens]
Ras GTPase-activating-like protein IQGAP3 [OS=Homo sapiens]
Membrane-associated phosphatidylinositol transfer protein 1 [OS=Homo sapiens]
Protein disulfide-isomerase TMX3 [OS=Homo sapiens]

Metaxin-3 [OS=Homo sapiens]
Mitochondrial import inner membrane translocase subunit Tim10 B [OS=Homo sapiens]
Retinal rod rhodopsin-sensitive cGMP 3',5'-cyclic phosphodiesterase subunit delta [OS=Homo sapiens]
39S ribosomal protein S18a, mitochondrial [OS=Homo sapiens]
Tumor suppressor candidate 2 [OS=Homo sapiens]
protein S100-A11 [OS=Homo sapiens]
Phospholipid scramblase 3 [OS=Homo sapiens]
Calmodulin-regulated spectrin-associated protein 2 [OS=Homo sapiens]
DNA replication ATP-dependent helicase/nuclease DNA2 [OS=Homo sapiens]
HEAT repeat-containing protein 6 [OS=Homo sapiens]
Ankyrin repeat domain-containing protein 34A [OS=Homo sapiens]
Rap guanine nucleotide exchange factor 4 [OS=Homo sapiens]
Desmoplakin [OS=Homo sapiens]
lysine-specific demethylase phf2 [OS=Homo sapiens]
Serine/threonine-protein kinase MRCK gamma [OS=Homo sapiens]
Voltage-dependent calcium channel gamma-3 subunit [OS=Homo sapiens]
Surfeit locus protein 1 [OS=Homo sapiens]
alpha-N-acetylgalactosaminidase [OS=Homo sapiens]
Isoform 1 of BRISC and BRCA1-A complex member 2 [OS=Homo sapiens]
Calcium uptake protein 3, mitochondrial [OS=Homo sapiens]
Transcriptional repressor protein YY1 [OS=Homo sapiens]
Phytanoyl-CoA dioxygenase domain-containing protein 1 [OS=Homo sapiens]
Metabotropic glutamate receptor 7 [OS=Homo sapiens]
Clavesin-1 [OS=Homo sapiens]
origin recognition complex subunit 4 [OS=Homo sapiens]
Teneurin-2 [OS=Homo sapiens]
TBC1 domain family member 9B [OS=Homo sapiens]
Retinol dehydrogenase 14 [OS=Homo sapiens]
3-ketodihydrosphingosine reductase [OS=Homo sapiens]
Lysosome-associated membrane glycoprotein 5 [OS=Homo sapiens]
Gamma-aminobutyric acid receptor subunit alpha-1 [OS=Homo sapiens]
immunoglobulin kappa variable 3D-11 [OS=Homo sapiens]
Putative ciliary rootlet coiled-coil protein 2 [OS=Homo sapiens]
nicotinamide phosphoribosyltransferase [OS=Homo sapiens]
Engulfment and cell motility protein 3 [OS=Homo sapiens]
28S ribosomal protein S12, mitochondrial [OS=Homo sapiens]
SEC14 domain and spectrin repeat-containing protein 1 [OS=Homo sapiens]
cAMP-dependent protein kinase inhibitor gamma [OS=Homo sapiens]
Isoform 2 of Gastrin/cholecystokinin type B receptor [OS=Homo sapiens]
Protein SCO2 homolog, mitochondrial [OS=Homo sapiens]

Thioredoxin domain-containing protein 17 [OS=Homo sapiens]
Pre-mRNA-splicing factor 38A [OS=Homo sapiens]
Myosin light chain kinase family member 4 [OS=Homo sapiens]
Disheveled-associated activator of morphogenesis 1 [OS=Homo sapiens]
Cathepsin G [OS=Homo sapiens]
UPF0687 protein C20orf27 [OS=Homo sapiens]
Alpha-2A adrenergic receptor [OS=Homo sapiens]
Pro-neuropeptide Y [OS=Homo sapiens]
Epididymis-specific alpha-mannosidase [OS=Homo sapiens]
inositol-trisphosphate 3-kinase B [OS=Homo sapiens]
Cytosolic fe-s cluster assembly factor narfl [OS=Homo sapiens]
NADH-ubiquinone oxidoreductase chain 4 [OS=Homo sapiens]
mitogen-activated protein kinase 10 [OS=Homo sapiens]
Vacuolar protein sorting-associated protein 18 homolog [OS=Homo sapiens]
Adenylate cyclase type 5 [OS=Homo sapiens]
Trafficking protein particle complex subunit 5 [OS=Homo sapiens]
RAS protein activator like-3 [OS=Homo sapiens]
Serpin B8 [OS=Homo sapiens]
Calcium-binding protein 1 [OS=Homo sapiens]
Fas-binding factor 1 [OS=Homo sapiens]
Protein PBDC1 [OS=Homo sapiens]
60S ribosomal protein L9 [OS=Homo sapiens]
Olfactory receptor 56A5 [OS=Homo sapiens]
ATP-binding cassette sub-family A member 5 [OS=Homo sapiens]
Cathepsin L1 [OS=Homo sapiens]
PH and SEC7 domain-containing protein 2 [OS=Homo sapiens]
dedicator of cytokinesis protein 5 [OS=Homo sapiens]
THAP domain-containing protein 2 [OS=Homo sapiens]
Collagen alpha-1(XXI) chain [OS=Homo sapiens]
Deoxyribonuclease-2-alpha [OS=Homo sapiens]
Phosphatidylinositol 3-kinase regulatory subunit alpha [OS=Homo sapiens]
Elongation factor G, mitochondrial [OS=Homo sapiens]
Tumor protein p53-inducible protein 11 [OS=Homo sapiens]
translocation protein sec62 [OS=Homo sapiens]
argininosuccinate lyase [OS=Homo sapiens]
Katanin p80 WD40 repeat-containing subunit B1 [OS=Homo sapiens]
Transmembrane and coiled-coil domains protein 1 [OS=Homo sapiens]
N-acetylmuramoyl-L-alanine amidase [OS=Homo sapiens]
Cyclic AMP-responsive element-binding protein 3-like protein 4 [OS=Homo sapiens]
carbonic anhydrase-related protein 11 [OS=Homo sapiens]
Gamma-glutamyl hydrolase [OS=Homo sapiens]

HLA class II histocompatibility antigen, DR alpha chain [OS=Homo sapiens]
N-acylglucosamine 2-epimerase [OS=Homo sapiens]
Unconventional myosin-Id [OS=Homo sapiens]
GTP-binding protein SAR1a [OS=Homo sapiens]
lysophosphatidic acid receptor 1 [OS=Homo sapiens]
Proteasome subunit beta type-10 [OS=Homo sapiens]
Protein FAM131B [OS=Homo sapiens]
Zinc transporter ZIP10 [OS=Homo sapiens]
BTB/POZ domain-containing protein KCTD1 [OS=Homo sapiens]
Cytochrome c oxidase subunit 3 [OS=Homo sapiens]
3'(2'),5'-bisphosphate nucleotidase 1 [OS=Homo sapiens]
Chromosome alignment-maintaining phosphoprotein 1 [OS=Homo sapiens]
Sterile alpha motif domain-containing protein 14 [OS=Homo sapiens]
SUMO-activating enzyme subunit 1 [OS=Homo sapiens]
Mitogen-activated protein kinase kinase kinase 5 [OS=Homo sapiens]
Trans-3-Hydroxy-L-proline dehydratase [OS=Homo sapiens]
Translation machinery-associated protein 7 [OS=Homo sapiens]
Contactin-6 [OS=Homo sapiens]
Diphosphoinositol polyphosphate phosphohydrolase 3-alpha [OS=Homo sapiens]
Sphingomyelin phosphodiesterase [OS=Homo sapiens]
Armadillo repeat-containing X-linked protein 3 [OS=Homo sapiens]
Epithelial discoidin domain-containing receptor 1 [OS=Homo sapiens]
Netrin-G2 [OS=Homo sapiens]
Golgin subfamily A member 7B [OS=Homo sapiens]
Pterin-4-alpha-carbinolamine dehydratase 2 [OS=Homo sapiens]
Ribosome maturation protein SBDS [OS=Homo sapiens]
Unhealthy ribosome biogenesis protein 2 homolog [OS=Homo sapiens]
Adenylate kinase 7 [OS=Homo sapiens]
serine/threonine-protein kinase 38-like [OS=Homo sapiens]
Rho GTPase-activating protein 23 [OS=Homo sapiens]
osteoclast-stimulating factor 1 [OS=Homo sapiens]
Receptor expression-enhancing protein 1 [OS=Homo sapiens]
39S ribosomal protein L17, mitochondrial [OS=Homo sapiens]
nuclear transport factor 2 [OS=Homo sapiens]
60S ribosomal protein L37a [OS=Homo sapiens]
C-jun-amino-terminal kinase-interacting protein 4 [OS=Homo sapiens]
Transmembrane glycoprotein NMB [OS=Homo sapiens]
Ras GTPase-activating protein-binding protein 1 [OS=Homo sapiens]
Carboxypeptidase M [OS=Homo sapiens]
OCIA domain-containing protein 1 [OS=Homo sapiens]
RING finger protein unkempt homolog [OS=Homo sapiens]

GDP-mannose 4,6 dehydratase [OS=Homo sapiens]
Proteasome activator complex subunit 1 [OS=Homo sapiens]
Phospholipid phosphatase-related protein type 4 [OS=Homo sapiens]
Isoform 3 of Docking protein 3 [OS=Homo sapiens]
erythroid membrane-associated protein [OS=Homo sapiens]
Membrane-bound transcription factor site-1 protease [OS=Homo sapiens]
hormone-sensitive lipase [OS=Homo sapiens]
methylthioribose-1-phosphate isomerase [OS=Homo sapiens]
DENN domain-containing protein 1A [OS=Homo sapiens]
Protein S100-A8 [OS=Homo sapiens]
U4/U6 small nuclear ribonucleoprotein Prp3 [OS=Homo sapiens]
serine/threonine-protein kinase 4 [OS=Homo sapiens]
Structure-specific endonuclease subunit SLX4 [OS=Homo sapiens]
Protein myomixer [OS=Homo sapiens]
Probable E3 ubiquitin-protein ligase HECTD2 [OS=Homo sapiens]
Adenylate cyclase type 1 [OS=Homo sapiens]
pleckstrin homology domain-containing family A member 1 [OS=Homo sapiens]
Ninein-like protein [OS=Homo sapiens]
Mannose-1-phosphate guanyltransferase beta [OS=Homo sapiens]
GTP-binding protein rheb [OS=Homo sapiens]
Complement C5 [OS=Homo sapiens]
Dedicator of cytokinesis protein 4 [OS=Homo sapiens]
mitochondrial import inner membrane translocase subunit Tim8 B [OS=Homo sapiens]
Lysophosphatidylcholine acyltransferase 2 [OS=Homo sapiens]
Elongator complex protein 1 [OS=Homo sapiens]
Syntaxin-binding protein 6 [OS=Homo sapiens]
translation initiation factor eIF-2B subunit delta [OS=Homo sapiens]
39S ribosomal protein L19, mitochondrial [OS=Homo sapiens]
BEN domain-containing protein 7 [OS=Homo sapiens]
Caveolae-associated protein 3 [OS=Homo sapiens]
NEDD4-like E3 ubiquitin-protein ligase WWP2 [OS=Homo sapiens]
Cullin-2 [OS=Homo sapiens]
Synaptojanin-2 [OS=Homo sapiens]
Protein canopy homolog 3 [OS=Homo sapiens]
histone deacetylase 6 [OS=Homo sapiens]
Glucocorticoid-induced transcript 1 protein [OS=Homo sapiens]
Acyl-CoA synthetase short-chain family member 3, mitochondrial [OS=Homo sapiens]
Calponin-3 [OS=Homo sapiens]
Pyrroline-5-carboxylate reductase 3 [OS=Homo sapiens]
PI-PLC X domain-containing protein 2 [OS=Homo sapiens]
U6 snRNA-associated Sm-like protein LSm6 [OS=Homo sapiens]

nuclear pore glycoprotein p62 [OS=Homo sapiens]
39S ribosomal protein L50, mitochondrial [OS=Homo sapiens]
Ferrochelatase, mitochondrial [OS=Homo sapiens]
Potassium voltage-gated channel subfamily B member 2 [OS=Homo sapiens]
Isoform 1 of RNA demethylase ALKBH5 [OS=Homo sapiens]
Protein FAM234B [OS=Homo sapiens]
Secretory carrier-associated membrane protein 5 [OS=Homo sapiens]
Syntaxin-binding protein 2 [OS=Homo sapiens]
glutamine--fructose-6-phosphate aminotransferase [isomerizing] 1 [OS=Homo sapiens]
Microtubule-associated serine/threonine-protein kinase 1 [OS=Homo sapiens]
Ubiquitin-like modifier-activating enzyme 5 [OS=Homo sapiens]
AP-2 complex subunit sigma [OS=Homo sapiens]
Ovostatin homolog 2 [OS=Homo sapiens]
Protein disulfide-isomerase A2 [OS=Homo sapiens]
COMM domain-containing protein 9 [OS=Homo sapiens]
Inositol-tetrakisphosphate 1-kinase [OS=Homo sapiens]
Ras-related protein Rab-23 [OS=Homo sapiens]
Cytochrome c oxidase assembly factor 3 homolog, mitochondrial [OS=Homo sapiens]
Probable tRNA N6-adenosine threonylcarbamoyltransferase [OS=Homo sapiens]
iron-sulfur cluster assembly 2 homolog, mitochondrial [OS=Homo sapiens]
Mucolipin-2 [OS=Homo sapiens]
Cleft lip and palate transmembrane protein 1 [OS=Homo sapiens]
RAC-gamma serine/threonine-protein kinase [OS=Homo sapiens]
UDP-glucose 6-dehydrogenase [OS=Homo sapiens]
SUMO-activating enzyme subunit 2 [OS=Homo sapiens]
Gamma-aminobutyric acid receptor-associated protein-like 1 [OS=Homo sapiens]
Pre-mRNA-splicing factor spf27 [OS=Homo sapiens]
7-dehydrocholesterol reductase [OS=Homo sapiens]
RNA polymerase II subunit A C-terminal domain phosphatase SSU72 [OS=Homo sapiens]
Protein FAM162A [OS=Homo sapiens]
5'-nucleotidase domain-containing protein 2 [OS=Homo sapiens]
CAAX prenyl protease 2 [OS=Homo sapiens]
Utrophin [OS=Homo sapiens]
Zinc finger protein ZPR1 [OS=Homo sapiens]
THUMP domain-containing protein 1 [OS=Homo sapiens]
WAS protein family homolog 6 [OS=Homo sapiens]
Netrin receptor UNC5A [OS=Homo sapiens]
Multivesicular body subunit 12B [OS=Homo sapiens]
Telomerase protein component 1 [OS=Homo sapiens]
Glia-derived nexin [OS=Homo sapiens]

GDP-L-fucose synthase [OS=Homo sapiens]
5-hydroxytryptamine receptor 1F [OS=Homo sapiens]
Peptidyl-prolyl cis-trans isomerase E [OS=Homo sapiens]
Thymocyte nuclear protein 1 [OS=Homo sapiens]
ubiquitin-fold modifier-conjugating enzyme 1 [OS=Homo sapiens]
Sodium-dependent proline transporter [OS=Homo sapiens]
GTP-binding protein Di-Ras1 [OS=Homo sapiens]
Quinone oxidoreductase PIG3 [OS=Homo sapiens]
ATP synthase mitochondrial F1 complex assembly factor 1 [OS=Homo sapiens]
Stathmin-4 [OS=Homo sapiens]
Mitogen-activated protein kinase 8 [OS=Homo sapiens]
Thioredoxin-related transmembrane protein 4 [OS=Homo sapiens]
Rho guanine nucleotide exchange factor 37 [OS=Homo sapiens]
Immunoglobulin heavy variable 3-15 [OS=Homo sapiens]
Double-stranded RNA-binding protein Staufin homolog 2 [OS=Homo sapiens]
Tetraspanin-3 [OS=Homo sapiens]
Isoamyl acetate-hydrolyzing esterase 1 homolog [OS=Homo sapiens]
Neurobeachin-like protein 2 [OS=Homo sapiens]
ras-related protein rab-31 [OS=Homo sapiens]
nucleolysin TIA-1 isoform p40 [OS=Homo sapiens]
Isoform 3 of TNFAIP3-interacting protein 3 [OS=Homo sapiens]
fas-activated serine/threonine kinase [OS=Homo sapiens]
transcription elongation factor spt6 [OS=Homo sapiens]
Plasma protease C1 inhibitor [OS=Homo sapiens]
PHD finger-like domain-containing protein 5A [OS=Homo sapiens]
WD repeat-containing protein 27 [OS=Homo sapiens]
Protein shisa-6 homolog [OS=Homo sapiens]
NADH dehydrogenase (ubiquinone) complex I, assembly factor 6 [OS=Homo sapiens]
protein transport protein Sec23B [OS=Homo sapiens]
Rapamycin-insensitive companion of mTOR [OS=Homo sapiens]
Desmocollin-2 [OS=Homo sapiens]
Adenosine kinase [OS=Homo sapiens]
autophagy-related protein 2 homolog B [OS=Homo sapiens]
Huntingtin-interacting protein 1 [OS=Homo sapiens]
Rab3 GTPase-activating protein non-catalytic subunit [OS=Homo sapiens]
PiggyBac transposable element-derived protein 5 [OS=Homo sapiens]
Sister chromatid cohesion protein PDS5 homolog B [OS=Homo sapiens]
neuronal calcium sensor 1 [OS=Homo sapiens]
Heat shock protein beta-8 [OS=Homo sapiens]
E3 ubiquitin/ISG15 ligase TRIM25 [OS=Homo sapiens]
Probable serine carboxypeptidase CPVL [OS=Homo sapiens]

trafficking protein particle complex subunit 1 [OS=Homo sapiens]
FGFR1 oncogene partner 2 [OS=Homo sapiens]
regulator complex protein LAMTOR3 [OS=Homo sapiens]
1-phosphatidylinositol 4,5-bisphosphate phosphodiesterase eta-2 [OS=Homo sapiens]
Phosphomannomutase 1 [OS=Homo sapiens]
Vesicle transport protein SFT2B [OS=Homo sapiens]
WD repeat-containing protein 61 [OS=Homo sapiens]
Guanine nucleotide-binding protein G(I)/G(S)/G(O) subunit gamma-13 [OS=Homo sapiens]
Transmembrane protein 143 [OS=Homo sapiens]
integrin beta-8 [OS=Homo sapiens]
Olfactomedin-like protein 3 [OS=Homo sapiens]
Coiled-coil domain-containing protein 18 [OS=Homo sapiens]
spastin [OS=Homo sapiens]
Extracellular matrix protein 2 [OS=Homo sapiens]
Exocyst complex component 3-like protein 4 [OS=Homo sapiens]
Cocaine- and amphetamine-regulated transcript protein [OS=Homo sapiens]
Cerebellin-4 [OS=Homo sapiens]
alpha-hemoglobin-stabilizing protein [OS=Homo sapiens]
Tetranectin [OS=Homo sapiens]
Acyl carrier protein, mitochondrial [OS=Homo sapiens]
Mitochondrial peptide methionine sulfoxide reductase [OS=Homo sapiens]
UPF0577 protein KIAA1324-like [OS=Homo sapiens]
Laminin subunit beta-4 [OS=Homo sapiens]
Isoform 2 of DNA-directed RNA polymerases I and III subunit RPAC2 [OS=Homo sapiens]
Multidrug resistance-associated protein 5 [OS=Homo sapiens]
Tyrosine-protein kinase BTK [OS=Homo sapiens]
von Willebrand factor A domain-containing protein 1 [OS=Homo sapiens]
Inactive serine protease 54 [OS=Homo sapiens]
Rhophilin-1 [OS=Homo sapiens]
GrpE protein homolog 1, mitochondrial [OS=Homo sapiens]
Cell adhesion molecule-related/down-regulated by oncogenes [OS=Homo sapiens]
Dynein heavy chain 6, axonemal [OS=Homo sapiens]
Bifunctional polynucleotide phosphatase/kinase [OS=Homo sapiens]
Hydroxymethylglutaryl-CoA lyase, mitochondrial [OS=Homo sapiens]
Meiosis regulator and mRNA stability factor 1 [OS=Homo sapiens]
Leucine-rich repeat-containing protein 30 [OS=Homo sapiens]
Protein LSM12 homolog [OS=Homo sapiens]
Ankyrin repeat domain-containing protein 13D [OS=Homo sapiens]
H/ACA ribonucleoprotein complex subunit 4 [OS=Homo sapiens]
Isoform 2 of Rho GTPase-activating protein 9 [OS=Homo sapiens]

Peroxisomal membrane protein PEX14 [OS=Homo sapiens]
Leucine zipper protein 1 [OS=Homo sapiens]
Histone-lysine N-methyltransferase, H3 lysine-36 and H4 lysine-20 specific [OS=Homo sapiens]
histone-lysine N-methyltransferase SETDB2 [OS=Homo sapiens]
E3 ubiquitin-protein ligase CBL-C [OS=Homo sapiens]
Liver carboxylesterase 1 [OS=Homo sapiens]
UDP-glucose:glycoprotein glucosyltransferase 2 [OS=Homo sapiens]
cingulin [OS=Homo sapiens]
BICD family-like cargo adapter 1 [OS=Homo sapiens]
Krev interaction trapped protein 1 [OS=Homo sapiens]
Histone-lysine N-methyltransferase SMYD3 [OS=Homo sapiens]
Protocadherin Fat 2 [OS=Homo sapiens]
LYR motif-containing protein 9 [OS=Homo sapiens]
Putative sodium-coupled neutral amino acid transporter 7 [OS=Homo sapiens]
Isoform 2 of Hydroxyacylglutathione hydrolase-like protein [OS=Homo sapiens]
Complement C1q subcomponent subunit A [OS=Homo sapiens]
Peptidyl-tRNA hydrolase ICT1, mitochondrial [OS=Homo sapiens]
gamma-glutamylaminocyclotransferase [OS=Homo sapiens]
Kazrin [OS=Homo sapiens]
Mesencephalic astrocyte-derived neurotrophic factor [OS=Homo sapiens]
Leucine-rich repeat and transmembrane domain-containing protein 2 [OS=Homo sapiens]
Potassium channel subfamily K member 4 [OS=Homo sapiens]
Kinetochore protein NDC80 homolog [OS=Homo sapiens]
Arginine and glutamate-rich protein 1 [OS=Homo sapiens]
pre-mRNA 3' end processing protein WDR33 [OS=Homo sapiens]
Protocadherin alpha-6 [OS=Homo sapiens]
Glycine N-methyltransferase [OS=Homo sapiens]
adenomatous polyposis coli protein 2 [OS=Homo sapiens]
Putative uncharacterized protein encoded by LINC00167 [OS=Homo sapiens]
Tudor domain-containing protein 10 [OS=Homo sapiens]
Laforin [OS=Homo sapiens]
Diacylglycerol kinase gamma [OS=Homo sapiens]
Putative uncharacterized protein ENSP00000334305 [OS=Homo sapiens]
migration and invasion enhancer 1 [OS=Homo sapiens]
NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 1 [OS=Homo sapiens]
armadillo repeat-containing protein 1 [OS=Homo sapiens]
Mismatch repair endonuclease PMS2 [OS=Homo sapiens]
arginine/serine-rich protein 1 [OS=Homo sapiens]
DNA-directed RNA polymerase I subunit RPA43 [OS=Homo sapiens]

Charged multivesicular body protein 1a [OS=Homo sapiens]
Stomatin-like protein 3 [OS=Homo sapiens]
Protein asteroid homolog 1 [OS=Homo sapiens]
Eukaryotic translation initiation factor 3 subunit D [OS=Homo sapiens]
Kinesin-like protein KIF1B [OS=Homo sapiens]
Rho-related BTB domain-containing protein 1 [OS=Homo sapiens]
PAS domain-containing serine/threonine-protein kinase [OS=Homo sapiens]
Transcription factor E2F7 [OS=Homo sapiens]
Centriolin [OS=Homo sapiens]
urea transporter 1 [OS=Homo sapiens]
Persulfide dioxygenase ETHE1, mitochondrial [OS=Homo sapiens]
Parathyroid hormone-related protein [OS=Homo sapiens]
Ribonuclease P protein subunit p25-like protein [OS=Homo sapiens]
Cell division cycle 5-like protein [OS=Homo sapiens]
BLOC-1-related complex subunit 7 [OS=Homo sapiens]
A-kinase anchor protein 8 [OS=Homo sapiens]
leucine-rich repeat-containing protein 45 [OS=Homo sapiens]
U6 snRNA-associated Sm-like protein LSm7 [OS=Homo sapiens]
Serine/threonine-protein kinase Nek2 [OS=Homo sapiens]
Ras GTPase-activating-like protein IQGAP2 [OS=Homo sapiens]
40S ribosomal protein S29 [OS=Homo sapiens]
Isoform 3 of Hepatocyte growth factor receptor [OS=Homo sapiens]
Tripartite motif-containing protein 46 [OS=Homo sapiens]
guanine nucleotide-binding protein g(i)/g(s)/g(o) subunit gamma-5 [OS=Homo sapiens]
Semaphorin-6B [OS=Homo sapiens]
Alanyl-tRNA editing protein Aarsd1 [OS=Homo sapiens]
Ras-related protein M-Ras [OS=Homo sapiens]
5-oxoprolinase [OS=Homo sapiens]
carbohydrate sulfotransferase 12 [OS=Homo sapiens]
39S ribosomal protein L3, mitochondrial [OS=Homo sapiens]
5-phosphohydroxy-L-lysine phospho-lyase [OS=Homo sapiens]
Girdin [OS=Homo sapiens]
nucleoporin Seh1 [OS=Homo sapiens]
Protein FAM83D [OS=Homo sapiens]
Nuclear pore membrane glycoprotein 210 [OS=Homo sapiens]
Leucine-rich repeat and fibronectin type-III domain-containing protein 3 [OS=Homo sapiens]
Dolichol-phosphate mannosyltransferase subunit 1 [OS=Homo sapiens]
probable RNA-binding protein EIF1AD [OS=Homo sapiens]
Rho GTPase-activating protein 5 [OS=Homo sapiens]
Limbin [OS=Homo sapiens]

Aspartate--tRNA ligase, mitochondrial [OS=Homo sapiens]
WD repeat and FYVE domain-containing protein 1 [OS=Homo sapiens]
StAR-related lipid transfer protein 9 [OS=Homo sapiens]
Methylcrotonoyl-CoA carboxylase subunit alpha, mitochondrial [OS=Homo sapiens]
TP53-binding protein 1 [OS=Homo sapiens]
Uncharacterized protein C6orf203 [OS=Homo sapiens]
tetratricopeptide repeat protein 9B [OS=Homo sapiens]
Isoform 3 of Transcription cofactor vestigial-like protein 4 [OS=Homo sapiens]
RELT-like protein 2 [OS=Homo sapiens]
Tektin-1 [OS=Homo sapiens]
uridine 5'-monophosphate synthase [OS=Homo sapiens]
Coiled-coil domain-containing protein 191 [OS=Homo sapiens]
Signal peptidase complex subunit 2 [OS=Homo sapiens]
nucleolar and coiled-body phosphoprotein 1 [OS=Homo sapiens]
peptidyl-prolyl cis-trans isomerase H [OS=Homo sapiens]
proline-rich protein 30 [OS=Homo sapiens]
Heat shock factor-binding protein 1 [OS=Homo sapiens]
Nuclear receptor-binding protein 2 [OS=Homo sapiens]
Leucine zipper putative tumor suppressor 1 [OS=Homo sapiens]
Intron-binding protein aquarius [OS=Homo sapiens]
syntaxin-binding protein 3 [OS=Homo sapiens]
Nuclear receptor subfamily 0 group B member 2 [OS=Homo sapiens]
Unconventional myosin-XV [OS=Homo sapiens]
Charged multivesicular body protein 3 [OS=Homo sapiens]
Cohesin subunit SA-3 [OS=Homo sapiens]
myotubularin-related protein 10 [OS=Homo sapiens]
Zinc finger ZZ-type and EF-hand domain-containing protein 1 [OS=Homo sapiens]
MAGUK p55 subfamily member 3 [OS=Homo sapiens]
structural maintenance of chromosomes protein 2 [OS=Homo sapiens]
Immunoglobulin-like and fibronectin type III domain-containing protein 1 [OS=Homo sapiens]
Zinc finger protein 334 [OS=Homo sapiens]
Teneurin-3 [OS=Homo sapiens]
Complement C1s subcomponent [OS=Homo sapiens]
Eomesodermin homolog [OS=Homo sapiens]
8-oxo-dGDP phosphatase NUDT18 [OS=Homo sapiens]
Phospholipase DDHD2 [OS=Homo sapiens]
Contactin-3 [OS=Homo sapiens]
Leucine-rich repeat-containing protein 14 [OS=Homo sapiens]
IQ domain-containing protein D [OS=Homo sapiens]
Leucine--tRNA ligase, cytoplasmic [OS=Homo sapiens]

Sideroflexin-5 [OS=Homo sapiens]
Zinc finger CCHC domain-containing protein 14 [OS=Homo sapiens]
Leucine-rich repeat-containing protein 27 [OS=Homo sapiens]
Testis-expressed protein 33 [OS=Homo sapiens]
Chloride anion exchanger [OS=Homo sapiens]
Ribonuclease pancreatic [OS=Homo sapiens]
mesothelin [OS=Homo sapiens]
Bcl-2-associated transcription factor 1 [OS=Homo sapiens]
Nucleolysin TIAR [OS=Homo sapiens]
Receptor-interacting serine/threonine-protein kinase 3 [OS=Homo sapiens]
Putative uncharacterized protein FLJ43343 [OS=Homo sapiens]
Sterol regulatory element-binding protein cleavage-activating protein [OS=Homo sapiens]
Trafficking protein particle complex subunit 9 [OS=Homo sapiens]
signal-induced proliferation-associated protein 1 [OS=Homo sapiens]
Fermitin family homolog 1 [OS=Homo sapiens]
Collagen alpha-2(IX) chain [OS=Homo sapiens]
REST corepressor 3 [OS=Homo sapiens]
transcription termination factor 2 [OS=Homo sapiens]
Ubiquitin-conjugating enzyme E2 Z [OS=Homo sapiens]
Protein diaphanous homolog 1 [OS=Homo sapiens]
Fibronectin type III domain-containing protein 1 [OS=Homo sapiens]
Chromodomain-helicase-DNA-binding protein 1-like [OS=Homo sapiens]
A-kinase anchor protein 17A [OS=Homo sapiens]
protein farnesyltransferase/geranylgeranyltransferase type-1 subunit alpha [OS=Homo sapiens]
dCTP pyrophosphatase 1 [OS=Homo sapiens]
Plasma kallikrein [OS=Homo sapiens]
dehydrogenase/reductase SDR family member 2, mitochondrial [OS=Homo sapiens]
TSC22 domain family protein 2 [OS=Homo sapiens]
Proton-associated sugar transporter A [OS=Homo sapiens]
Xylosyltransferase 1 [OS=Homo sapiens]
Potassium voltage-gated channel subfamily H member 5 [OS=Homo sapiens]
A-kinase anchor protein 9 [OS=Homo sapiens]
Junctophilin-2 [OS=Homo sapiens]
Oral-facial-digital syndrome 1 protein [OS=Homo sapiens]
EF-hand calcium-binding domain-containing protein 5 [OS=Homo sapiens]
Beta-Ala-His dipeptidase [OS=Homo sapiens]
Kinase D-interacting substrate of 220 kDa [OS=Homo sapiens]
Scrapie-responsive protein 1 [OS=Homo sapiens]
Isoform 2 of Ly-6/neurotoxin-like protein 1 [OS=Homo sapiens]
Protocadherin-19 [OS=Homo sapiens]

Peroxisomal acyl-coenzyme A oxidase 2 [OS=Homo sapiens]
protein lifeguard 2 [OS=Homo sapiens]
centromere protein J [OS=Homo sapiens]
39S ribosomal protein L46, mitochondrial [OS=Homo sapiens]
[Pyruvate dehydrogenase (acetyl-transferring)] kinase isozyme 2, mitochondrial [OS=Homo sapiens]
Dynein heavy chain 2, axonemal [OS=Homo sapiens]
N-alpha-acetyltransferase 16, NatA auxiliary subunit [OS=Homo sapiens]
Transmembrane protein 151A [OS=Homo sapiens]
prolyl 3-hydroxylase OGFOD1 [OS=Homo sapiens]
A-kinase anchor protein 10, mitochondrial [OS=Homo sapiens]
SLAIN motif-containing protein 2 [OS=Homo sapiens]
Tubby-related protein 1 [OS=Homo sapiens]
proteasome inhibitor PI31 subunit [OS=Homo sapiens]
Eukaryotic translation initiation factor 4 gamma 2 [OS=Homo sapiens]
A-kinase anchor protein SPHKAP [OS=Homo sapiens]
Arf-GAP with SH3 domain, ANK repeat and PH domain-containing protein 2 [OS=Homo sapiens]
Serine/threonine-protein kinase Nek1 [OS=Homo sapiens]
Isoform 3 of Serine/threonine-protein phosphatase 6 regulatory ankyrin repeat subunit A [OS=Homo sapiens]
SH3 domain-binding protein 1 [OS=Homo sapiens]
Laminin subunit beta-1 [OS=Homo sapiens]
Histone deacetylase complex subunit SAP18 [OS=Homo sapiens]
Zinc finger CCCH-type with G patch domain-containing protein [OS=Homo sapiens]
IQ calmodulin-binding motif-containing protein 1 [OS=Homo sapiens]
immunoglobulin heavy variable 6-1 [OS=Homo sapiens]
N-glycosylase/DNA lyase [OS=Homo sapiens]
Sphingosine-1-phosphate phosphatase 2 [OS=Homo sapiens]
SCO-spondin [OS=Homo sapiens]
Serine/threonine-protein kinase Chk1 [OS=Homo sapiens]
Protein S100-A4 [OS=Homo sapiens]
Flap endonuclease 1 [OS=Homo sapiens]
Isoform 4 of MAP7 domain-containing protein 3 [OS=Homo sapiens]
Transmembrane protein C17orf113 [OS=Homo sapiens]
Uncharacterized protein C12orf45 [OS=Homo sapiens]
palladin [OS=Homo sapiens]
Paired amphipathic helix protein Sin3a [OS=Homo sapiens]
Insulin-like growth factor 2 mRNA-binding protein 1 [OS=Homo sapiens]
Krueppel-like factor 1 [OS=Homo sapiens]
182 kDa tankyrase-1-binding protein [OS=Homo sapiens]
mRNA turnover protein 4 homolog [OS=Homo sapiens]

Aspartyl/Asparaginyl beta-hydroxylase [OS=Homo sapiens]
G-protein-signaling modulator 1 [OS=Homo sapiens]
Protein RMD5 homolog B [OS=Homo sapiens]
Olfactory receptor 8B4 [OS=Homo sapiens]
PDZ domain-containing protein 2 [OS=Homo sapiens]
Cystathionine gamma-lyase [OS=Homo sapiens]
Activin receptor type-2B [OS=Homo sapiens]
Pleckstrin homology domain-containing family M member 3 [OS=Homo sapiens]
Myomegalin [OS=Homo sapiens]
Ubiquitin thioesterase OTU1 [OS=Homo sapiens]
ranBP-type and C3HC4-type zinc finger-containing protein 1 [OS=Homo sapiens]
Niban-like protein 2 [OS=Homo sapiens]
Tetratricopeptide repeat protein 23 [OS=Homo sapiens]
Protein FAM136A [OS=Homo sapiens]
protein AF1q [OS=Homo sapiens]
alanine--tRNA ligase, mitochondrial [OS=Homo sapiens]
Diacylglycerol kinase theta [OS=Homo sapiens]
Alpha-protein kinase 3 [OS=Homo sapiens]
Methylosome subunit pICln [OS=Homo sapiens]
Papilin [OS=Homo sapiens]
Reticulocalbin-3 [OS=Homo sapiens]
Dynein heavy chain 9, axonemal [OS=Homo sapiens]
ATP synthase protein 8 [OS=Homo sapiens]
Receptor-type tyrosine-protein phosphatase R [OS=Homo sapiens]
Isoform 3 of PR domain zinc finger protein 5 [OS=Homo sapiens]
Death ligand signal enhancer [OS=Homo sapiens]
Alkaline phosphatase, tissue-nonspecific isozyme [OS=Homo sapiens]
WASH complex subunit 5 [OS=Homo sapiens]
SAFB-like transcription modulator [OS=Homo sapiens]
Coiled-coil domain-containing protein 185 [OS=Homo sapiens]
Polypeptide N-acetylgalactosaminyltransferase 5 [OS=Homo sapiens]
Non-lysosomal glucosylceramidase [OS=Homo sapiens]
Signal transducer and activator of transcription 6 [OS=Homo sapiens]
Tyrosine--tRNA ligase, mitochondrial [OS=Homo sapiens]
Collagen alpha-1(IX) chain [OS=Homo sapiens]
Rho guanine nucleotide exchange factor 15 [OS=Homo sapiens]
Myomesin-2 [OS=Homo sapiens]
Programmed cell death protein 4 [OS=Homo sapiens]
Ribonucleoprotein PTB-binding 2 [OS=Homo sapiens]
Period circadian protein homolog 2 [OS=Homo sapiens]
Kinesin-like protein KIF22 [OS=Homo sapiens]

paired amphipathic helix protein sin3b [OS=Homo sapiens]
Zinc finger protein ZFPM1 [OS=Homo sapiens]
Syntaxin-3 [OS=Homo sapiens]
CUGBP Elav-like family member 4 [OS=Homo sapiens]
Isoform 2 of Protein CLEC16A [OS=Homo sapiens]
peroxisomal carnitine O-octanoyltransferase [OS=Homo sapiens]
protein scribble homolog [OS=Homo sapiens]
Calcium load-activated calcium channel [OS=Homo sapiens]
ADP-dependent glucokinase [OS=Homo sapiens]